

BENCHMARKS

THE COMPUTING CENTER

University of North Texas

VOLUME 10 NUMBER 6

July/August 1989

Focus on Electronic Communications

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SERVICES AVAILABLE TO USERS OF THE UNT COMPUTING FACILITIES

The UNT Computing Center is located in the Information Sciences Building (ISB), Room 119. Phone Numbers:

Computing Center: (817) 565-2324
 Help Desk: (817) 565-4050
 Micro Support: (817) 565-2316, 565-2319
 Graphics Lab: (817) 565-3479
 ISB I/O Area: (817) 565-3890
 BA I/O Area: (817) 565-2350

All personnel listed below can be contacted either by calling the Computing Center or by sending them electronic mail on MUSIC/SP (ID-codes follow each name. All IDs are on BITNET node UNTMUSIC).

Benchmarks - Claudia Lynch (A504)

Information & ID-Codes; Disk Space Problems - Marilyn Jett

Statistical/Research Support - George Morrow (A501), Panu Sittiwong (AC09), Phanit Laosirirat (AC44)

Academic ADABAS/COM-PILETE - Janis Burkham (AC55)

CRSP & COMPUSTAT Problems - Panu Sittiwong (AC09), Phanit Laosirirat (AC44)

Student Programming Problems - CSCI Dept., GAB Room 542A, BCIS Dept., BARoom 152

Problems with JCL, Passwords, or Operating Systems; or Communication/Terminal Problems - Help Desk

Data Entry; Test Scoring & Analysis - Betty Grise

Administrative Applications - Coy Hoggard

Printout Retrieval - ISB or BA I/O Operators



DIALING-UP UNT COMPUTERS OVER THE TELEPHONE

Phone numbers for the Local Area Network (LAN) are:

300/1200 BAUD: (817) 565-3300, (817) 565-3499
 300-9600 BAUD: (817) 565-3461
 300-9600 BAUD: D/FW METRO 429-6006, 429-9314
 Area code 214 must dial 817 before the METRO number.

The numbers that accommodate multiple baud rates have an autobaud feature that requires you to hit the <RETURN> key repeatedly so that the receiving modem can determine the appropriate baud rate. When you have established a communications link, the # prompt will appear on your screen and you can enter one of following CALL commands to connect with the computer of your choice.

CALL 8040 connects with the NAS/8083 (supports line editing or PCWS). Operating environments available are: MUSIC/SP, VM/CMS.

CALL 3270 connects with the NAS/8083 through a 3270 protocol converter (supports full-screen editing). Operating environments are: MUSIC/SP, VM/CMS, ADABAS/COM-PILETE, PHOENIX

CALL DEC connects with the VAXcluster (VMS, Eunice)

CALL 780 connects with the Research VAX (Unix)

CALL 3000 connects with the Libraries' HP-3000 (Bibliographic database).

CALL 6800 connects with the NBI (Unix)

Communications Settings

LAN addresses	Data Bits	Parity	Stop Bits
DEC, 3000	8	N	1
8040, 3270, 780, 6800	7	E	1

HOURS FOR UNIVERSITY OF NORTH TEXAS COMPUTER ACCESS AREAS : SUMMER 1989*

Location	Days	Times
Computing Center RJE	Sunday Monday Tuesday-Saturday	Noon-Midnight 7 a.m.-Midnight 7 a.m., Tues.-Midnight Sat. (Open 24 hours/day)
ISB 110 Terminal Area	Sunday Monday-Thursday Friday Saturday	1-10 p.m. 8 a.m.-10 p.m. 8 a.m.-6 p.m. 9 a.m.-6 p.m.
College of Business	Sunday Monday-Thursday Friday, Saturday	Noon-11:45 p.m. 8:15 a.m.-11:45 p.m. 8:15 a.m.-7:45 p.m.
GAB 550C	Sunday Monday-Thursday Friday Saturday	2 p.m.-Midnight 9 a.m.-11 p.m. 9 a.m.-3 p.m. CLOSED
Graphics Lab	Sunday Monday-Thursday Friday Saturday	Noon-8 p.m. 8 a.m.-10 p.m. 8 a.m.-5 p.m. Noon-5 p.m.

*Hours may vary. Check MUSIC/VAX News and/or posted schedules for exceptions.

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GENERAL INFORMATION

Electronic Communications Terminology

By Claudia Lynch, *Benchmarks* Editor (BITNET:AS04@UNTVMI) and Janis Burkham, Academic Database Consultant (BITNET:AC55@UNTVMI)

The topic of electronic communications is quite broad, encompassing a wide range of subjects, as can be seen from the content of the various articles in this issue. On-line Bibliographic Data bases, Electronic Bulletin Boards, FAX Services, and E-Mail are some of the topics covered herein.

As with any technical topic, a "specialized" language is used in the discussion of electronic communications. Following are some definitions that will, hopefully, help you to understand the material that is presented in the articles.

- **Asynchronous** - A communication method in which one computer sends a packet of data and receives an acknowledgement from the other computer for each packet received.
- **BPS** - Bits Per Second. A measurement of data transmission speed. **BAUD** is considered synonymous with bps, however in the most technical sense they are not equivalent.
- **Dial-Up Line** - Communications link over a standard telephone line.
- **Ethernet** - 10-million bps LAN protocol.
- **Gateway** - A "go-between" computer that links two different types of communication methods.
- **LAN** - Local Area Network. A group of computers in a relatively small area that communicate with each other using the same protocol.
- **Leased Line** - A communications link over a telephone line reserved for a particular company's use.
- **Modem** - A device that translates the digital signals of a computer into the analog signals of a telephone line (or vice versa).
- **Synchronous** - A method by which communication is synchronized, with each side being able to sense as data is sent or received, eliminating the need to acknowledge each data packet separately.
- **Terminal Emulation** - A method in which a PC or Macintosh mimics a dumb computer terminal in order to communicate with another computer (usually a mainframe).
- **3270** - A terminal family, used with IBM mainframe computers, often emulated by microcomputers.
- **VT-100** - A type of terminal, used with DEC and other computers, commonly emulated by microcomputers.
- **WAN** - Wide Area Network. A group of computers not in the same area that are connected by lines of communication, generally over telephone lines.

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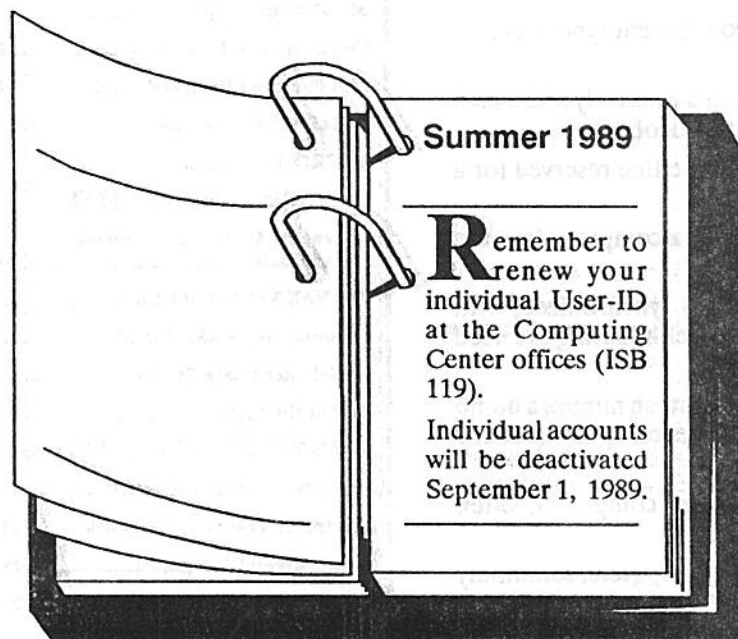
On-line Bibliographic Data Base Document Available

Over the past several years, libraries have been switching from manual (card) cataloging systems to automated (computerized) ones. Computerized cataloging systems provide users with easy to access and up-to-date information about the books available in the library. This ease of access has been accomplished by the use of local area networks, dial-up modems, and wide area networks.

A document designed to aid people in accessing various universities' libraries from the VAXcluster has been created by Billy Barron, the VAX System Manager for Academic Computing Services. "Accessing On-Line Bibliographic Data Bases," contains instructions on accessing the following libraries:

- Colorado Alliance of Research Libraries
- Pennsylvania State
- Texas A&M
- California State University
- University of Maryland
- University of North Texas
- University of Texas at Austin
- U T Health Science Center at San Antonio
- Dartmouth
- Sam Houston State University
- University of California
- University of Notre Dame
- University of Minnesota
- University of Texas at Arlington
- University of Texas at Dallas
- University of Texas Health Center at Tyler

If you would like a copy of this document, it is available free-of-charge from the Computing Center main office, ISB 119.§



Dial-Up Facilities at the University of North Texas

By Mike Maner, Data Communications Coordinator

Communication with main-frame computers at the University of North Texas is accomplished through a Local Area Network (LAN) manufactured by Sytek, Inc., of Sunnyvale, California. The Sytek Localnet LAN is supported over a "broad band" system based on cable television technology (CATV). The CATV system used by the Localnet LAN is more flexible than most commercial cable TV networks, however, in that it allows any point on the network to both send and receive messages to and from any other point on the network.

The Computing Center maintains a variety of host equipment that can allow the computer user to access the Localnet LAN. While this is only one of several networks sharing the broad band system, attachment to the Localnet LAN provides access to virtually every mini and mainframe host computer on campus.

Information about the UNT dial-up facilities is printed each month on the inside page of *Benchmarks*. Phone numbers as well as recommended communications parameter settings are listed. The article "Connecting Your Microcomputer to the Mainframe System at UNT Via Telephone" in the Microcomputer section of this issue contains specific information on hardware and software requirements for this endeavor.

Several banks of 300/1200 BAUD MODEMs are available by dialing 565-3300 or 565-3499. These MODEMs are set to autobaud and should provide satisfactory service when accessed using any commercially available MODEM supporting the Bell standards for 300 and 1200

BAUD. No other standards are supported by these devices.

One small bank of 300/1200/2400/9600 BAUD MODEMS is available by dialing 565-3461. These are US Robotics Courier HST units. The HST MODEM features data compression and error-control for increased throughput. These devices use MNP error-control and may work satisfactorily with other high speed MODEM brands. People using the same brand as the computing center have experienced few difficulties.

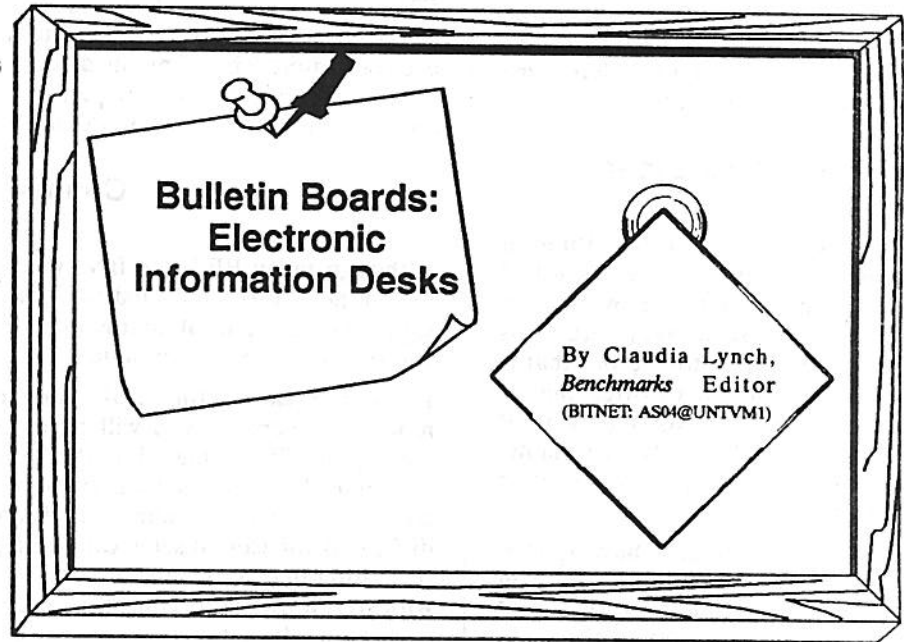
Metro users may gain access to the same UNT systems by dialing 429-6006 or 429-9314. The single bank of eleven US Robotics Courier HST MODEMS is located at TCOM in Ft. Worth. The individual MODEM interfaces are multiplexed to form one data channel and transmitted to the Denton campus via microwave. A corresponding multiplexer or MUX located at the UNT Computing Center extracts the eleven RS-232 data streams from the single multiplexed channel.

The data stream from each telephone MODEM (metro and local) is connected to a port on either an Agile Systems or a Sytek broadband MUX allowing access to all host computer systems on the UNT campus.

Finally, if you experience difficulties while using one of the dial-up facilities at UNT, please contact the Computing Center at (817) 565-2324 for assistance. If you believe that one or more of the dial-up facilities is down, ask the person answering the phone to open a trouble call regarding the problem and be prepared to provide the phone number you were dialing, the type of hardware and software you are using, your location and telephone number as well as a description of the problem encountered. §

Micro-Crunch Documentation

The *USER'S GUIDE TO Micro-Crunch* can be purchased in the University Store. The May/June newsletter failed to mention this.



As we approach the 21st century, we are entering into what has been called *The Information Age*. In *The Information Age*, knowledge is power, and if you have access to information you have knowledge, therefore power. Signs of this transition have been appearing for quite some time, and one of those is the proliferation of Bulletin Boards.

Purpose

Basically, electronic bulletin boards are just what their name implies. People post messages and files which can be read, responded to, and/or copied by others. Only instead of the messages being stored on a tangible medium like a cork board, they are stored electronically on media like microcomputer hard disks. Owners of BBS' fall into four basic categories: Clubs or Special Interest Groups, Private Individuals, Companies, and Educational Institutions. UNT has a Bulletin Board that runs on the VAXcluster (see page 23 for more information). There are also a lot of private boards in the area (a list of area BBS' is available on the UNT BBS). Most Bulletin Boards are free, although some require an annual subscription fee (usually minimal), and some request donations. Many companies have established Bulletin Boards as a way of communicating with their customers. They provide technical support for their products, post information about their products, and accept criticisms and suggestions relevant to the services they provide.

Joining a BBS

Although some BBS' are accessible from public facilities, like the UNT BBS, most people who access a variety of BBS' on a regular basis own microcomputers. Aside from the computer itself, the most essential piece of equipment is a modem. If you don't already have a modem, get a fast one. A 2400 baud modem (baud refers to the speed of transmission - also known as bps) is highly recommended and can be found for under \$200 from mail-order or discount stores. The article "Connecting Your Microcomputer to the Mainframe System

at UNT Via Telephone" on page 9 of this issue discusses hardware and software solutions for microcomputer telecommunications.

What To Expect

The first time you call a Bulletin Board, you will probably be asked for your name and a password. You should choose a password that means something to you but that is not something so obvious that it could be guessed easily by a total stranger. Your first name, last name, or initials, for example, would not be good passwords.

Most Bulletin Boards have special bulletins for first-time users. You will be told about the system and how to use it. You will probably see a screen with items in a menu, from which you are to choose. They are usually organized as described below.

Structure

The structure of BBS' and the information on them vary widely, reflecting the personalities and interests of the participants and the BBS operators (SysOps). Most Boards are divided into at least two parts, **Message Areas** and **File Areas**. You can enter, read and reply to messages in the Message area. It is usually organized into sections, each section containing postings on specific topics. The UNT BBS Message section is organized in this manner. Typical topics are: Programming, Politics, Specific Microcomputers such as Apple and IBM, Games, things for sale, etc. Message sections are great places to find out information about proposed products, software updates, programming tips, and the like [take a look at the *Best of the BBS* column in the VAX section this issue for a sampling of these discussions]. It is also not uncommon to see job openings posted by a wide variety of companies and recruiters.

File areas are also usually divided into sections by topic. Typical topics would be communications software, utilities, games, and clip art. Within each section is usually quite a bit of public domain software which can be downloaded and used by individuals on their personal computers. Many BBS' are the first to obtain the latest versions of popular public domain software.

Connect Charges

Although many BBS' are free, you will still have to pay for the time your telephone line is connected to them. Because of this, it is wise to get some experience using local boards first, so you won't have to pay while becoming adept at using your communications hardware and software.

If you have **call waiting**, make sure you disable it before calling out on your modem. Otherwise, you will have your connection severed by the first incoming call. To **disable call waiting**, prefix the number you are dialing with *70 (this must be done from a touch-tone phone). You should send the modem a pause between the command to disable call waiting and the number you are dialing. If you can't disable call waiting on your phone, a recording will come on stating that your number can't be completed as dialed. You should check with your local phone company to see if it is possible for you to add the ability to disable call waiting on your phone.

Local BBS'

Following is a list of current BBS' here in Denton. They are listed by name, telephone number, baud rates accepted, hours of operation, and SysOp(s).

Board	Phone #	Baud Rates	Hours	SysOp(s)
-144 Midnight Info.*	566-1500	24/12/300	24hr	Eric Lipscomb
Alpha*	566-6146	24/12/300	24hr	John Hasemeier
Denton Area Mac Users	383-3268	24/12/300	24hr	Kent Kingery
HTE Data++Link	387-0834	12/300	24hr	Harold Liles
The Ford Board	381-0413	12/300	9 p-12n	Curtis Ford
The Moose's Den*	566-1907	24/12/300	24hr	Van Holland
UNT BBS	565-3461	96/24/12/300	24hr	Academic Computing Services

* FIDO-NET nodes featuring international NETMAIL and local echomail message areas. -144 Midnight Info is the Denton host for the International Electronic Musician's Users Group.

Support Groups

As mentioned at the beginning of this article, many companies provide technical support for their customers through national bulletin board services. Additionally, there are also general support boards that can be quite useful. One of the most widely used of these support boards is CompuServe. It contains libraries of useful utilities of all types and is the home of support groups for most of the major vendors. IBM, Compaq, Adobe, ALdus, WordPerfect, Ventura, Microsoft, and Quark all have forums on CompuServe. If you want to talk to experts about those products, CompuServe is the place to do it. If you are

interested in joining, call 800/848-8199. More information about CompuServe can be found in the "FAX" article on this page.

The UNT BBS *text* file area contains lists of other area and national BBS'. DFW.BBS and DFWBBS.TXT are files listing DFW area Boards. There is also a file, EMS.BBS that lists national BBS' associated with various medical topics.

Trade magazines, such as *Texas Computing*, also frequently list BBS'. When you start accessing Boards that require you to dial long-distance, you may be disconcerted at the rise in your telephone bill. If this occurs, you might consider subscribing to a service such as PC Pursuit from Telnet. PC Pursuit provides you with unlimited evening and weekend access to bulletin boards in cities it supports (sort of like MCI or Sprint). You will be charged a set monthly fee which will be billed to your credit card. Definately a asset for the serious BBS aficionado!

References

"About Bulletin Boards," originally appearing in *Acronyms*, the Michigan State University Computing Newsletter, this article was received from the Article database of CCNEWS, the Electronic Forum for Campus Computing Newsletter Editors, a BITNET-based service of Educom.

Barber, Scott. "Calling On-Line Bulletin Boards," *Benchmarks* (September/October 1986 pp. 10-11).

Hannaford, Steve. "Getting Connected," *Step-By-Step Electronic Design* (July 1988, Volume 1, Number 7, pp. 5,14).

Negrion, Tom. "Insights on CompuServe," *MACWORLD* (January, 1989, pp. 75-80).

Toffler, Alvin. *The Third Wave*, New York: Morrow 1980.

FAX Facts: How to Combine Electronic Services for Fun and (Maybe) Profit

By Claudia Lynch, *Benchmarks* Editor (BITNET:AS04@UNTVM1)

According to *PC WORLD* (June 1989) there are approximately five million facsimilie (FAX) machines operating throughout the world today. One way to reach those machines and, theoretically, even more than five million people, is to spend around \$500 dollars for a FAX board and install it into your PC. You could do this, but if you only want to send faxes occasionally, it may be wiser to use a FAX service available from sources such as AT&T, CompuServe, MCI, The Source, and Western Union Corporation.

All five of the companies mentioned above limit the fax service to sending only. You are also not able to transmit graphics. In the article "The E-MAIL Route to FAX," by Daniel J. Rosenbaum (*PC WORLD*, June 1989, pp.168-170), which was the inspiration and major source for this article, there is a table of FAX charges for each company to different parts of the globe. For a 3K FAX within the U.S., the costs range from \$1.00 (AT&T Mail) to \$1.25 (CompuServe and Western Union). For a 3K FAX to Japan, you could pay anywhere between \$4.90 (AT&T Mail) to \$9.60 (CompuServe). According to the author, this is because the services' billing strategies vary widely. Most charge by half-page blocks, which could be 28 lines (MCI) or 1250 characters (Western Union), or something else. Below are brief descriptions, gleaned from Rosenbaum's article, of each service.

- **AT&T Mail** - AT&T Mail treats a FAX address like any other address, making it easy to send the same message to several FAX machines, a couple of telex addresses and a lot of AT&T Mail addresses at the same time. To subscribe to AT&T Mail:

AT&T Customer Assistance Center
P.O. Box 3505
New Brunswick, NJ 08903
800/367-7225, 800/627-5672

E-Mail Costs: subscription \$30/year, 20 or 45 cents per on-line message created unless you are an AT&T Access user.

FAX Costs: first 1500 characters 55 cents, subsequent blocks 45 cents each.

- **CompuServe** - Costs a lot and allows only one addressee at a time. Gives quality output, however. To subscribe:

CompuServe
5000 Arlington Centre Blvd.
P.O. Box 20212
Columbus, OH 43220
800/444-6245, 200/833-8484

E-Mail Costs: \$39.95/year subscription. On-line charge at 1200 or 2400 bps (baud) \$12.50/hour. CompuServe network access 30 cents/hour. Tymnet access \$12/hour prime time (8 a.m. -6 p.m.), \$2/hour evenings.

FAX Costs: First 1000 characters 75 cents, subsequent blocks 25cents.

- **MCI MAIL** - MCI Mail was one of the first E-mail ventors to offer PC-to-FAX service. Unfortunately, the method for sending faxes over MCI-Mail is a bit unwieldy. Once you've followed their procedure, however, you can send the same message to several FAX machines and mailboxes simultaneously. To subscribe:

MCI Mail
1150 17 St. NW
Washington, DC 20036
800/444-6245, 200/833-8484

E-Mail Costs: \$25/year or \$10/month (preferred service - covers some FAX charges). Tymnet access 25 cents/minute.

FAX Costs: First 28 lines, 50 cents. Subsequent blocks 30 cents each.

- **The Source - FAX** is separate from SourceMail and is accessed by typing fax at the command-level prompt. A little un-wieldy, in that you have to recompose or reload the text file to send messages to both FAX and E-mail numbers. To subscribe:

The Source Telecomputing Co.
1616 Anderson Rd.
McLean, VA 22102
800/368-3549, 703/734-7500, 703/734-0586 (fax)

E-Mail Costs: \$29.95 - one-time registration fee. \$10/month membership fee - credited toward usage. On-line charges: prime time (7 a.m. - 6 p.m., M-F) at 1200 bps - 43 cents/minute. at 2400 bps 46 cents/minute. Non-prime time (6 p.m. - 7 a.m. M-F, all day Saturday, Sunday, and holidays) at 1200 bps 18 cents/minute, 2400 bps 20 cents/minute.

FAX Costs: 95 cents/first 28 lines; 50 cents/subsequent blocks. Additional recipients 95 cents each. Delivery report charge 45 cents.

- **Western Union** - Western Union's EasyLink is the only system of the five that allow legal-size and wide (132 column) documents. The user interface is reported to be cryptic, but it will send to multiple FAX machines, EasyLink mailboxes and Telex machines simultaneously. If the receiving FAX machine doesn't support wide paper, the print is automatically compressed. To subscribe:

Western Union Corp.
1 Lake St.
Upper Saddle River, NJ 07458
800/572-5184

E-Mail Costs: \$25/monthly minimum (applied to usage including FAX). On-line charges: prime time (7 a.m. - Midnight M-F) at 1200 bps 50 cents/minute, 2400 bps 84 cents/minute. Non-prime time: 40% less.

FAX Costs: 55 cents/first 1250 characters; 35cents/subsequent blocks.

References

- Glossbrenner, Alfred. "An Insider's Guide to MCI Mail," *PC WORLD* (June 1989, pp. 182-186).
- Rosenbaum, Daniel J. "The E-Mail Route to FAX," *PC WORLD* (June 1989, pp. 168-170). §



BENCHMARKS FORUM

BENCHMARKS FORUM is intended to serve as a vehicle for answering questions that may be of general interest to the user community. If you have a question, please send electronic mail to the *Benchmarks* editor (AS04@UNTVM1) or write it down and drop it by the Computing Center. We will try to answer it in the next issue.

Question: Even though I delete all of my mail from mailing lists and other sources on the VAX, I continue to use more and more disk space. What can I do?

Answer: One of the quirks of the VAX MAIL program is that it can not reclaim all of the deleted mail space on its own. The command used to recover the space manually is COMPRESS. When in MAIL, type COMPRESS to get the compression process started. After the compression finishes, the file MAIL.OLD needs to be deleted. MAIL.OLD will be in your home directory unless you have a MAIL subdirectory. If you have a MAIL subdirectory, the MAIL.OLD file will be in that subdirectory.

Question: When I am working on the VAX and I get a notice of a MAIL message, it interferes with editing. How can I fix this?

Answer: Any time anything happens to the screen, such as a MAIL or PHONE notice, use <CTRL> <W> (hold the CTRL key and press the W key, then release both keys). This will re-write the screen. The MAIL or PHONE notice will disappear and only your text to be edited will be left on the screen.

This month's second Benchmarks Forum question and answer is from the Southwest Texas State Computing Network News, February, 1989 issue.

Benchmarks Reader/User feedback is encouraged. Send all letters, suggestions, etc to (AS04@UNTVM1), FAX 817-565-4060 or to the Benchmarks Editor at:

Academic Computing Services
University of North Texas
Computing Center
NT Station, Box 13495
Denton, Texas 76203



UNT Joins AppleSEED

The University of North Texas is now an institutional member of AppleSEED (Society to Exchange Exciting Discoveries). This not-for-profit organization was founded two years ago to promote the interchange of ideas for application of Apple products, particularly the Macintosh, and to promote cooperative efforts among the academic and industrial members. Membership to this association is granted on an organizational level, not on an individual basis, and is by invitation only. All who belong to a member organization are eligible to take part in AppleSEED activities.

AppleSEED may be of particular interest to faculty members who are involved in the use of Macintosh computers for research or teaching. There are bimonthly meetings at wh-

Continued. See SEED on page 8.

THE BITNET CONNECTION

By Philip Baczewski, BITNET INFOREP (BITNET: AC12@UNTVM1)

This Column is a continuing feature of Benchmarks intended to present news and information on various aspects of the BITNET wide area network.

Just a Keystroke Away

Interactive Communication on the BITNET Network

Just a phone call away - perhaps you've seen that phrase on an advertisement in print, heard it on a broadcast ad, or heard it the last time you saw one of your relatives. Telecommunication has been with us long enough that we tend to take it for granted. Most of us know that if need be, we can pick up a telephone and have virtually instant communication with someone next door, across the country, or around the world. Of course, one reason we know this is that the telephone companies are quite fond of reminding us of that fact in their many broadcast and print ads.

A possibly less well-known fact may be that BITNET also offers a method of virtually instant interactive communication which will allow you to carry on a "conversation" with someone across the country or around the world. Both ends of the conversation will need to be typed from terminals and may not actually be instantaneous depending upon the distance to the BITNET node with which you are communicating. Still, while BITNET will probably not replace the telephone any time soon, the interactive communication available on the network can be quite handy in accomplishing tasks previously only possible via an expensive long distance phone call (and please don't tell the phone companies I said that).

Interactive communication on BITNET is accomplished by using the TELL command on VM/CMS or the SEND command on VAX/VMS. You may already be familiar with these commands as a way to send messages to BITNET list or file servers. An interactive message to either of those types of software devices usually elicits some type of interactive response like "the file is being sent," or "you have been added to the mailing list." Well, if you have another BITNET user on the other end of the interactive message, the exchange might be as follows (using VM/CMS as an example):

TELL BOB AT FARNODE I sent you a copy of the paper we are presenting at next month's conference

TELL BOB AT FARNODE Have you received it yet?

FROM FARNODE(BOB) Yes, I received the file and have made some revisions to my part of it.

FROM FARNODE(BOB) I'll be sending you the revised copy later today.

FROM FARNODE(BOB) By the way, How about them Yankees...

...you get the idea. When an immediate interchange of information is helpful or necessary, interactive BITNET messages can often provide the vehicle for such interchange with an immediacy not possible when exchanging mail messages. (For more information on the VAX/VMS SEND command, see "Using Interactive Communication on the VAX" in the VAX section of this issue).

There may be times when you wish to communicate interactively with another BITNET user, but don't know if they are logged on to their local machine. Many of the computer systems on BITNET support a command to help you determine if someone is, in fact, currently logged on (not all systems, however, have the capability to support this command). On CMS, you could type:

```
MSG RSCS CMD nodename
CPQUERY NAMES
```

and on the VAX you would type:

```
SEND @nodename CPQUERY
NAMES
```

So, to check to see if Bob (from our previous example) is logged on, you would type **MSG RSCS CMD FARNODE CPQUERY NAMES** and you would receive an interactive message listing all of the users logged on at "FARNODE."

There is one service on BITNET which makes full use of this capability for interactive communication. **RELAY** is a world-wide, real-time conferencing facility which allows multiple users at different locations on BITNET to carry on interactive conversations. **RELAY**, which is a program designed to coordinate these conversations, is installed at various nodes on BITNET. Just as **LISTSERV** receives mail messages and redistributes them to those on mailing lists, **RELAY** can receive interactive messages and broadcast them to the other BITNET users who are signed onto **RELAY**.

LIST of the Month

Each month we will highlight one of the BITNET LISTSERV Special Interest Group (SIG) mailing lists. This month's list...

COMM-L@UGA

Coordinator: Phil Benchhoff (BENCHOFF@VTVM1)

Peers: VTVM2

COMM-L Communications Discussion: This list is to discuss both technical and non-technical aspects of the integration of voice, data, and video services on the same network. Topics could include management, installation, acquisition, or monitoring of communication networks.

*To subscribe, send the following command to **LISTSERV@UGA: SUBSCRIBE COMM-L yourname***

RELAY represents the potential for providing an interactive discussion forum for researchers within a field. If researchers with like interests all sign on at a pre-arranged time, they can then converse amongst themselves, exchanging the latest information on a topic or arguing the latest point of controversy within a field of study. While these types of conferences have been organized previously, I believe that **RELAY** has yet to reach it's full potential as an support tool for academic research.

BITNET mail messages can provide an invaluable service to those working in an academic environment. Interactive communication can go one step further in providing the immediate feedback not possible from mail messages. Whether you are sending interactive messages to a file or list server, or communicating with a colleague across the country, getting that immediate response can

only make your use of the network that much more powerful. And who knows, the way things are going, someday the whole world may be just a keystroke away. §

SEED continued from Page 7

ich one particular topic of interest to members is featured. Past topics have included presentations on HyperCard, an Apple Macintosh product fair, and networking solutions for Macintosh computers. Future meetings will be announced in forthcoming issues of *Benchmarks*. There is normally a \$25.00 per person registration fee for attendance of AppleSEED meetings. Faculty members who would like further information on AppleSEED can contact Philip Baczewski of Academic Computing Services (Ext. 2324, ISB 119). §

MICROCOMPUTERS

Connecting Your Microcomputer to The Mainframe System at UNT Via Telephone

By Panu Sittiwong, Academic Computing Consultant (BITNET: AC09@UNTVM1)

One reason that a student or faculty member at UNT might buy a microcomputer is to use it as a smart terminal to connect to the mainframe computer system at UNT. By doing this, it becomes possible to finish projects from home. In order to take advantage of the dial-up facilities, it is necessary to understand some basic concepts of telecommunications. This article will present those concepts and endeavor to help you get started in using our mainframe systems from home.

Basic Requirements

Some specialized hardware and software is required before you can connect your microcomputer to the mainframes here at UNT. Since the connection will be done through the telephone system, you will need to equip your microcomputer with an appropriate modem. Currently, our system supports communication rates from 300 to 9600 baud (or bps). Therefore, you have a wide range of choices concerning the modem you want to purchase. One consideration when purchasing a modem is whether or not a particular modem is compatible with Hayes Smartmodem (a defacto standard for microcomputer modems). Caution has to be taken, however, since not all Hayes-compatible modems are 100 % compatible (this may not be a serious problem depending upon your application).

If the modem you buy is an external modem, your microcomputer must be equipped with an Asynchronous Communication Interface (a serial port). Most microcomputers now on the market will have this port built in. If your microcomputer does not have this port, it is a good idea to buy a multifunction board which, in addition to providing a serial port, also provides a parallel printer port, memory expansion sockets, etc. Most asynchronous communications interfaces conform to a standard known as RS-232C and use a standard DB-25 plug for connection. An external modem, then, will connect to the serial port via a ribbon cable. Internal modems, on the other hand, have a serial port built in, and therefore do not require an additional serial port.

Software Requirements

In addition to the hardware requirement, you will need to acquire communications software. Currently, the Computing Center distributes three communication software packages: Procomm, PCWS, and MS-Kermit (see related article, page 10 of this newsletter). These programs are free to UNT faculty, staff and students. All three programs can be used with any IBM or IBM-compatible PC. Kermit is also available for Macintosh users.

To obtain Procomm, PCWS, or MS-Kermit, you need to bring either a 5 1/4" 360k or 3 1/2" 720k diskette to the Computing Center offices, room 119 Information Science Building, or to the Computer lab located in room 110 of the Information Science Library. The diskette that will contain the software **MUST** be formatted and have no other existing files on it. You will need one diskette for each software package. Kermit for the Macintosh can be obtained from room 110 in the Information Science Library. Again, you will need to bring one 3 1/2" diskette.

Selecting the Appropriate Software

All the communications software packages available from the Computing Center is fully supported by Academic Computing Services. They can be used with all computer systems at UNT, however, each package may be more suitable for one particular operating system and ap-

plication. Following is a list of the strengths and weaknesses of each package:

- **Procomm:** Procomm is a package which provides a variety of functions which make it very user friendly. Some of those functions include automatic dialing, a dialing directory, and extensive support of script files. The disadvantage of Procomm, however, is its limited ability to map your keyboard. This limitation makes it more cumbersome to use Procomm to connect to MUSIC/SP or VM/CMS since the PFkeys were not tailored for these systems. Another disadvantage of Procomm is its inability to emulate graphic terminals. This makes Procomm undesirable if you want to use SAS/GRAPH on VM/CMS or DISSPLA on VAX/VMS.
- **MS-Kermit:** A major advantage of MS-Kermit is its ability to emulate a Tektronix 4010 Graphics terminal. This feature will allow you to look at the graphic output from either SAS/GRAPH or DISSPLA on your terminal. Therefore, we recommend MS-Kermit if you plan to use these graphic applications at UNT. Another important feature of MS-Kermit is its keyboard mapping capability which allows a user to map the PF keys as is appropriate to the host operating system. One disadvantage is that it does not support an extensive script language which may make it more difficult to customize your connection. To help ease this problem, Academic Computing Services distributes MS-Kermit along with all appropriate script files for connecting to the NAS 8083 IBM-compatible mainframe and to the VAX cluster.
- **PCWS:** PCWS is a program which is designed specifically to be used with the MUSIC/SP operating system. Hence, it provides a variety

of functions and commands which make it more user friendly in the MUSIC/SP environment. For example, file transfer to and from MUSIC/SP are done with a single MUSIC/SP command. We recommend PCWS, therefore, if you plan to connect to the MUSIC/SP operating system.

Making Connections

Before you can connect to any of the systems at UNT you need to configure the communications software as appropriate for a particular host system at UNT. The following table shows the essential parameters for each operating system at UNT based on each communication software package.

SOFTWARE	HOST SYSTEM AT UNT			
	MUSIC, CMS via 8040	MUSIC, CMS via 3270	VAX HP-3000	NBI, Research VAX
Procomm				
Word Length	7	7	8	7 ¹
Stop Bits	1	1	1	1
Parity	even	even	none	even ²
Flow Control	xon/xoff	xon/xoff	xon/xoff	xon/xoff
Handshaking	0	0	0	0
Kermit				
Parity	even	even	none	none
Flow Control	xon/xoff	xon/xoff	xon/xoff	xon/xoff
Handshaking	none	none	none	none
PCWS				
Word Length	8	n/a	n/a	n/a
Stop Bits	1	n/a	n/a	n/a
Parity	none	n/a	n/a	n/a

¹Needs to be changed to 8 when uploading and downloading files to and from the host system.

²Needs to be changed to none when uploading and downloading files to and from the host system.

After the above parameters are set to the appropriate values, you will also need to set the baud rate to correspond to your modem speed. Now you are in position to make the connection to the system you want by dialing the appropriate number. All the dial-up numbers both local Denton numbers and the Metroplex numbers are provided on the inside of every *Benchmarks* cover page.

When the telephone connection is established, you can access the Sytek Local Area Network (LAN). You will need to press the <ENTER> or <RETURN> key several times in order to have the modem on the LAN determine your modem speed. When the matching speed is established you will receive the #

sign on your screen. You are then connected to the Sytek LAN at UNT. At this point, follow the normal procedures, to connect to the system you want. §

Kermit 2.32A is Now Available

By Billy Barron, VAX System Manager
(BITNET:BILLY@UNTVAX)

The latest version of MS-Kermit for IBM PC and compatibles running MS-DOS (or PC-DOS) is now available from the UNT BBS or the Help Desk (ISB 110). This version of MS-Kermit adds some new features and fixes some bugs.

Foreign language users will like a new feature whereby characters are displayed right to left instead of the usual left to right. This feature is very useful when using Kermit to communicate in languages such as Hebrew and Arabic. The new ASK command allows Kermit programmers to request input from the keyboard into a variable. A new IF EQUAL command compares string variables. Another new command is ASSIGN, which allows variables to be assigned to one another. Release 2.32A has better color support during CONNECT and better displays during file transfer.

Several other minor improvements were made. The problems with GOTOs and labels in script programs has been fixed. The bug where data was lost when receiving files to a printer has been fixed. Bugs that caused crashes due to buffer overflows and stray interrupts have been fixed. Some of the confusion between COM1 and COM2 has been cleared up. This confusion has caused problems for many users including PCjr users. §

MS-Kermit Scripts

by Billy Barron, VAX System Manager (BITNET: BILLY@UNTVAX) and Panu Sittiwong, Academic Computing Consultant (BITNET: PANU@UNTVMI)

MS-Kermit provides its own minimal programming language known as Kermit Script. Script files are most useful in preparing the environment, such as baud rate, parity, and keyboard layout. A script file can contain any of the Script language commands. These commands are documented in the Kermit manual.

To invoke a script file, add an -F flag and the filename of the script to your command line to run kermit. For example, KERMIT -F VAX.INI would run Kermit and run the script file VAX.INI.

One of the more useful applications of the script language is a program to automatically log you on to the various systems on campus. The scripts shown below will automatically dial your modem, connect to the Sytek LAN, and then log you on to a machine on campus. Users who have PCUs instead of modems should delete the lines from "output ATZ\13" to "input 30 CONNECT". These scripts may also need to be adjusted for the correct COM port, baud, and phone numbers.

Script for Automatically Logging-In To The VAXcluster

```
; Script file for dialing a phone and connect to local area
; network and connect to DEC.
;
; last modification 10/6/88 by Panu Sittiwong
;
; "Enter one of the following numbers"
;
; +-----+
; 565-3300, 565-3499 for local
; 300/1200 baud
;
; 565-3461 for local 2400 baud
;
; (817) 429-6006, (817) 429-9314
; for 2400/1200/300 D/FW Metro
; +-----+
;
clear
set port 1 ; set com port as port 1
set baud 1200 ; set baud rate at 1200
set parity none
output ATZ\13 ; wake up modem
pause 2
input OK ; modem's response
output ATDTxxxxxx\13 ; Enter the Phone number here in place of
; xxxxxxxx
input 30 CONNECT ; wait for connection
pause 2
output \13 ; send several return to LAN to make
pause 2 ; sure it responds
output \13
```



```

pause 2
output \13
pause 2
output \13
pause 2
output \13
pause 2
output \13
pause 2
output \13
pause 2
output call DEC\13           ; place a call to DEC
set input echo off
input 20 username
echo "Enter your USERID"
output @con\13
input 5 PASSWORD
echo "Enter Your Password"
output @con
output \13
set input echo on
input 10 $                   ; wait for DEC prompt
connect

```

Script for Automatically Logging-In To MUSIC

```

; Script file for dialing a phone and connect to local area
; network and connect to MUSIC.
;
; last modification 10/6/88 by Panu Sittiwong
;
; "Enter one of the following numbers"
;
; +-----+
; 565-3300, 565-3499 for local
; 300/1200 baud
;
; 565-3461 for local 2400 baud
;
; (817) 429-6006, (817) 429-9314
; for 2400/1200/300 D/FW Metro
; +-----+
;
clear
set port 1                   ; set com port to 1
set baud 1200                ; set baud rate at 1200
set parity even
output ATZ\13                ; wake up modem
pause 2
input OK                     ; modem's response
output ATDTxxxxxx\13         ; Enter the Phone number here in place of
;                               xxxxxx
input 30 CONNECT             ; wait for connection
pause 2

```

Continued on page 13.

WordPerfect's Network Office Automation Software - Office

by Sandy Franklin, Microcomputer
Support Consultant

WordPerfect Corporation, in offering network versions of its major IBM Personal Computer products, combines the best of two worlds -- the renowned features of WPCORP products and the integrative abilities of PC network systems.

Network benefits such as software and printer sharing, easy file transfer, joint file creation, and consolidated systems management make WPCORP network products even more useful than their stand-alone versions. WordPerfect for PC networks combines sophisticated word processing with network file sharing and transferring. PlanPerfect in network form provides powerful spreadsheet capabilities, supplemented by easy access to shared files and network printers. WordPerfect Office, an innovative office management program, facilitates intra-office communications through electronic mail, coordinates the schedules of various network users, and manages each user's personal software system.

WordPerfect Office is the office automation software that allows network users to exchange mail and coordinate schedules, and provides organizational tools and software management for each network user. WordPerfect Office improves group communications and productivity.

WordPerfect Office's Electronic Mail facility provides a straightforward approach to correspondence between network users. Displayed in In and Out boxes on an informative mailbox screen, messages, letters, or files can be sent with a single keystroke to an individual or group

Continued. See WPO on page 13.

```

output \13                ; send several return to LAN to make sure it
pause 2                  ; respond.
output \13
pause 2
output \13
pause 2
output \13
pause 2
output \13
pause 2
output \13
pause 2
output \13
pause 2
output \13
pause 2
output call 3270\13       ; call LAN thru 3270 and make connection
input 10 COMPLETED      ; with MUSIC
output \13
pause 2
output \13
input 5 MENU
output 02
input 15 RUNNING
output \13
input 15 READ
output d music
input 15 RUNNING
output \13
input 15 READ
output xxxx\13           ; Enter your USERID here in place of xxxx
set input echo off
input 5 PASSWORD
echo "Enter Your Password"
output @con
output \13
set input echo on
take ibm.ini              ; start terminal emulation

```

Script for Automatically Logging-In To CMS:

```

; Script file for dialing a phone and connect to local area
; network and connect to CMS.
; last modification 10/6/88 by Panu Sittiwong
;
; "Enter one of the following numbers"
; +-----+
; 565-3300, 565-3499 for local
; 300/1200 baud
;
; 565-3461 for local 2400 baud
;
; (817) 429-6006, (817) 429-9314
; for 2400/1200/300 D/FW Metro
; +-----+

```

Continued on page 14.

WPO Continued from page 12.

of individuals on the network. Electronic Mail also includes password protection for an individual's mail files, encrypted mail, and a special phone message feature. A detailed description of WordPerfectOffice Mail is contained in "A Mail For All Seasons" on page ??? of this issue.

The WordPerfect Office Scheduler correlates the schedules of network users and tracks resources such as conference rooms and overhead projectors. Using the Scheduler, a manager can compare the WordPerfect Office calendars of all department members and the bookings of various conference rooms to arrange a possible meeting time and place.

From a menu called the Shell, each user can access all network computer programs. The Shell makes it easy to switch rapidly between programs and transfer data. WordPerfect Office also contains six helpful programs: Calendar, File Manager, Program Editor, Macro Editor, Calculator, and Notebook (a small database).

WordPerfect Office and other WordPerfect Network programs, run on most network systems that support DOS 3.0. WordPerfect Corporation fully supports WordPerfect, PlanPerfect, and Office on ten specific networks. The network printing facility of these three products is defined only for these the supported networks: 3Com 3+ Network; 10Net; AT&T StarLan; Banyan; IBM PC Network; NOKIA PC-Net (Europe only); Novell NetWare; TOPS; Torus Tapestry; ViaNet.

WordPerfect Corporation network products require a file server with 640Kb memory and a hard disk. WordPerfect Office requires DOS 2.0 and DOS file locking. DOS 3.0 is required for WPCORP's document locking feature. Each workstation requires 384Kb memory. Versions of WordPerfect before 4.1 and PlanPerfect before 2.1 do not interact with the WordPerfect Office Shell.

Continued. See WPO on page 14.

```

;
clear
set port 1           ; set com port to 1
set baud 1200        ; set baud rate at 1200
set parity even
output ATZ\13
pause 2
input OK              ; modem's response
output ATDTxxxxxx\13 ; Enter the Phone number here in place of
; xxxxxxx
input 30 CONNECT      ; wait for connection
pause 2
output \13            ; send return to LAN and make sure
pause 2              ; the LAN respond back with # sign
output \13
pause 2
output \13
pause 2
output \13
pause 2
output \13
pause 2
output \13
pause 2
output \13
pause 2
output call 3270\13    ; call LAN and connect to CMS
input 10 COMPLETED
output \13
pause 2
output \13
input 5 MENU
output 02
input 15 RUNNING
output \13
input 10 READ
output L xxxx\13      ; Enter your USERID here in place of xxxx
set input echo off
input 5 PASSWORD
echo "Enter Your Password"
output @con
output \13
set input echo on
take ibm.ini          ; start terminal emulation

```

The File IBM.INI Which Is Called From The MUSIC And CMS Automatic Log-In Scripts

; Panu Sittiwong, Academic Computing
 ; Last updated September 20, 1988
 ;
 ; Terminal setup.

Continued on page 15.

WPO Continued from page 12.

WordPerfect Corporation network products include illustrated manuals for the system manager and for each user. The system manager's manual contains installation instructions and other specific information. The user's manual contains a comprehensive reference section and step-by-step lessons.

This product is available on the Site License the University has with WordPerfect Corporation for \$23. The Site License must remain the property of the school and may not be loaned, transferred, or resold to off-campus users. It may only be used at official school sites and may not be used off-campus by anyone, including teachers, staff, and students.

You will need to license the file server, and all workstations. The Microcomputer Support Staff (2324, or 2316) will install the software and see that it works, and will have paperwork to complete for each individual. The \$23.00 includes the software installation, template for the Program Editor, and Features Card. The WordPerfect Office manual is an additional \$35.00. This is purchased with an Interdepartmental Order to the Computing Center.\$

Stat Packages Reviewed

If you have an interest in microcomputer statistical packages, you should read the March 1989 issue of *PC Magazine*. A 28-member panel reviewed forty-nine statistical packages, sixteen numerical processing packages, and ten scientific graphing packages. Among the products reviewed are: SAS, SPSSX-PC, Systat, BASS, Statgraphics, Math CAD, Eureka, and TK! Solver Plus. If you cannot locate a copy of this magazine, you can arrange to borrow it from Academic Computing Services.\$


```

; for IBM CGA or EGA color video displays
set term color 37, 44
;
; all setup to be used with MUSIC and CMS
;
set parity even
set send packet-length 90
set flow none
set handshake xon
set term wrap on
;
; Keyboard mapping section to enable the PFkey to work in
; MUSIC and CMS environment. This keyboard mapping may not
; work on some keyboards.
;
set key \315 \{27}1
set key \316 \{27}2
set key \317 \{27}3
set key \318 \{27}4
set key \319 \{27}5
set key \320 \{27}6
set key \321 \{27}7
set key \322 \{27}8
set key \323 \{27}9
set key \324 \{27}0
set key \389 \{27}-
set key \390 \{27}=
set key \337 \{27}8
set key \329 \{27}7
set key \852 \{27}-
set key \853 \{27}=
set key \270 \8
set key \338 \{27} \{27}i
set key \4434 \{27} \{27}i
connect

```

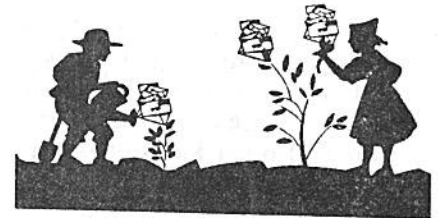
If you do not have MS-Kermit (or the latest version 2.32A), you can get it from the UNT BBS or from the Help Desk (ISB 110). Remember to bring a blank, formatted floppy disk if you are getting this software from the Help Desk. §

C System Developer's Toolbox - For \$8.00!

According to the July, 1989 issue of *PC World*, it is possible to get a full C development system for just \$8.00. The system consists of three programs, Multi-Edit, Personal C Compiler (PCC), and NDMAKE. Multi-Edit is a text editor, suitable for programming, writing batch files, and plain-ASCII word processing. PCC used to be known as DeSmetC. NDMAKE is a utility for automating multiple-file compilations. To order:

- Multi-Edit 4.0 demo - American Cybernetics, 455 S. 48th St. #108, Tempe, AZ 85281, 602/968-1945.
- Personal C Compiler shareware - C Ware, P.O. Box 428 Paso Robles, CA 93447, 805/239-4610 (\$8.00).
- NDMAKE - shareware from various bulletin boards.

A Mail For All Seasons



By Kevin Mullet, Microcomputer Support (BITNET:KEV@UNTVMX)

The Brave New World of E-Mail

Microcomputer-based networks brought many innovations into the office and classroom. On network file servers, for instance, users were able to share large common hard disks and use centrally available software and data. Another benefit, remote printing through the network, meant that every user in an area could have equal access to high-quality laser printer output from their local computer. Instead of moving to where the printer was, the printer, in effect, came to them. Also, high-speed communication gateways made minicomputers and mainframes in a neighboring room, building or state as accessible to the individual as the PC on their desk.

More innovative than any of these, however, is electronic mail on a desktop PC. Unlike the other innovations that came with local area networks, electronic mail is more than just another way to be efficient. Electronic mail brings with it the capacity for profound social change. It does so by introducing a medium of communication to the workplace that comes with little or no physical requirements for use, no social stratification, and best of all, no waiting.

Many of the Novell local-area networks on campus use an electronic mail product known as WordPerfect Office Mail. WPO Mail is one part of a larger product, WordPerfect Office, which includes programs ranging from a calculator and text editor to an appointment calendar and resource scheduler.

In a nutshell, WordPerfect Office mail is an electronic mail package that allows a person on a network to send messages, documents, programs or other kinds of files to other users, regardless of whether the recipient is logged on or not.

Perhaps the best way to get a taste of how WPO Mail might benefit users

in an office or academic setting is to give some examples of how WPO mail could be used with existing facilities. Most of these examples are being done daily on many of the networks on the NT campus.

caller's name and phone number and press [F7] to send the message on its way to the recipient. Later, perhaps while in another program, the receptionist will get a message on the bottom of the screen stating that the phone message recently sent has just been opened. Simple as that.

In many offices, though, the receptionist isn't taking nearly as many phone messages as was previously the case. Many of the people who used to play telephone tag with their busy associates are now communicating with them through electronic mail messages. This communication is much more effective, too. Instead of giving a general sum-

cases, they usually have a word processing document, program, or some statistical data to pass on to an associate or a group in the office. If so, they can just press "M" from the WPO Mail startup menu to select the "Mail" screen, give the name of the recipient for their files, and tab down to the FILES window to enter the file names. Once again, they press [F7] to send the files on their way to the recipient without having to change anyone's network security to give them access to specific files.

One benefit of WPO Mail is that it can provide an office with an iron-clad record of intra-office communication. Each important mes-

In a nutshell, WordPerfect Office mail is an electronic mail package that allows a person on a network to send messages, documents, programs or other kinds of files to other users, regardless of whether the recipient is logged on or not.

sage can be saved to a disk file for future reference. When a particular project is over, all the individual messages can be consolidated to make a historical record of the entire project.

By doing more of their communication through electronic

Communication in the WordPerfect Office

Pink paper phone messages -- the dreaded clutterers of doorways, desktops, chair seats, and computer screens, can now join the green ledger and the quill in office automation obscurity.

When the phone rings in any office on campus using WPO Mail, the receptionist need only press one key on a main menu to run the WPO Mail program. The starting screen is a set of two windows, an IN box for incoming mail, and an OUT box listing the messages recently sent out. At the bottom, is a list of current menu choices. When "P", for phone message, is pressed, the startup screen is replaced by a template of an electronic phone message. All the receptionist need do is ask the

many of a message to a third party who may or may not convey all the details of a message to the recipient, e-mail is always a direct form of communication between the sender and the recipient.

With WPO Mail, a user can type a message anywhere from 1 line to several pages long and send it on its way with the press of a key. If the person receiving the mail is logged in, they'll get a message on the bottom of their screen telling them they have electronic mail. If they are not logged in when the message is sent, they'll get a message when they do log in stating that they've got e-mail waiting for them. All they have to do is run the WPO Mail program to read their new messages.

Frequently, though, many of the people in an office have to communicate more to each other than can be stated in a simple message. In these

mail, most offices find that their need for formal meetings is greatly diminished. No longer does a group of persons need to be in the same place at the same time to get critical information. Through effective use of E-Mail important information can be distributed to a group of workers and acted upon in the time it used to take just to organize a meeting.

Acquiring WPO Mail for a workplace doesn't just buy the office another way to use its local area network -- it buys a new way of communicating that could transform the way the work gets done.

Teacher, Student and E-Mail.

Despite the product name, the office isn't the only workplace that could be enhanced by using WPO Mail. The

quality of the learning experience at NT is very much dependant on the quality of the communication within and outside the classroom. The communication between the instructors and students and between the students themselves is critical to the success of the learning experience. Factors ranging from increased enrollment to higher teacher/student ratios often combine to reduce the quality of this communication to less than desirable levels. Judicious use of electronic mail could serve not only to expand existing channels of communication, but to open new ones that weren't feasible through traditional means.

When WordPerfect Office is installed in a computer lab, the dialogue between teacher and student, and between student and student can extend beyond the physical

When WordPerfect Office is installed in a computer lab, the dialogue between teacher and student, and between student and student can extend beyond the physical limits of the classroom.

limits of the classroom.

By using WPO Mail the classroom is no longer just a room, and class time is no longer limited to the hours published in the class schedule. From the computer in their office, instructors can participate in an extended dialogue between themselves and the students. From individual workstations in computer labs, students can engage in more frequent and productive dialogues with other students.

A student can use WPO Mail to send class or research notes to other students in their group or class whenever convenient. The recipients of their e-mail don't need to be logged on to the network or even in the lab to receive their mail. The next time a student comes in to use the lab, they can simply check their mail when they log in to the lab's local area network. In this way, groups of students working on a project can communicate back and forth without

having to coordinate their schedules. Instead, they can meet whenever one of them checks their mailbox or sends mail out to the rest of the group. Instead of being limited to brief dialogues before and after class, students can now engage in discussions through WPO mail limited only by their imagination and the time available in the computer lab.

Through the file-sending capabilities of WPO Mail, an instructor can make a wide variety of materials instantly available to the students. By attaching other files or documents to his electronic mail, an instructor can distribute syllabi, class notes, assignments, instructions and study aids to

WordPerfect Office can certainly enhance communication in the office or classroom. In all fairness, I should mention that many of the applications mentioned in this article could be accomplished with other electronic mail packages. WordPerfect Office, however, has a few advantages over other packages, especially on the NT campus.

The Pros of WPO Mail

- **Ease of use**-- Most potential users of WPO Mail probably already know how to use it. As with all other WordPerfect corporation products, it has the same interface

as the WordPerfect word processor. Since most microcomputer users on campus already know and use WordPerfect, learning to use WPO mail would be an intuitive affair. Most WordPerfect users can

even start right off using WPO Mail without even reviewing the documentation, learning as they go.

- **Access to existing users**-- As the number of LANs on campus that use WPO Mail increases, it will become the de facto standard for micro-based mail on campus. This means that with WPO mail, you will be able to have immediate access to anyone else on campus who is attached to one of the Novell local-area networks with WPO mail. Currently, WPO Mail doesn't allow users to send messages directly from one local area network to another, but WordPerfect Corp. has promised that they will correct this deficiency with the next release, which is due to be released within the next few months.

students through E-Mail. Afterward, the instructor may check the same message in his out box to see which students have opened his mail and which have not.

This idea works even better in reverse. With WordPerfect Office, students can use the network as a medium for submitting their homework. Once they complete a paper, programs, etc., on their computer, students can run WPO Mail, type a small cover note to the instructor and attach their assignment to it by pressing <TAB> to move their cursor from their MESSAGE area to the FILES box on the bottom of the screen and typing in the name of any files they want to send to their instructor. So much for retyping or reprinting consecutive drafts of papers. Instructors can receive a student papers by WPO Mail, and save them to files which they can add their own notations to, and resend the whole affair back to the student, quickly and relatively painless.

- **Cost** -- WordPerfect Office is one of the software packages that is bulk-purchased from the manufacturer by Academic Computing. For less than twenty-five dollars per computer, consultants from the Microcomputer Support Team will install the WPO software (which includes a great deal more than just WPO Mail), and give initial training to the LAN supervisor.
- **Data Compatibility** -- People who already use WordPerfect will like the fact that they can save their mail messages to permanent storage on their disk as WordPerfect word-processing files. Likewise, they can send their WordPerfect files as mail messages.
- **Everything you've ever wanted to know...** -- When a user sends anyone a WPO message, they are able to tell when the recipient opened the message, and when they deleted it. With WPO Mail, no one is able to claim that they didn't get a message. Recipients of mail may also be notified when they get mail, no matter what other program they're in at the time.

The Cons of WPO Mail

- **No Folders** -- As users become more accustomed to using electronic mail to do their routine communication, they will want to save their e-mail messages for further reference. Some electronic mail packages, especially those on minicomputers and mainframes, provide "folders" for users to file their old messages in for future reference. In this way, all the messages concerning a given topic are grouped together for easy access. WPO Mail doesn't have this feature, so users who want to retain their messages for future reference must either print them out,

or save each of them to a separate file on disk.

- **The IN box limit** -- Whenever a message is sent to a WPO user, it's placed in their "IN" box. This virtual holding place has a capacity of about 50 or 60 messages. If a user neglects to check their mail for a long time, or lets old mail stay in their IN box for too long, other users will be unable to send them mail.
- **A world of its own** -- With all its bells and whistles, WPO Mail is essentially in a world by itself. Users of other mail programs on the VAX, MUSIC and CMS will no doubt be familiar with the connectivity they have available to them through wide-area networks such as THENET, NSF-Net, the Arpa-Internet and BITNET. These wide-area networks allow individuals using different mail programs to correspond with each other across distances of hundreds or even thousands of miles, toll free. Using WPO Mail won't prevent users from accessing these networks via conventional methods, of course, but it will mean that (s)he will have to use an additional mail program to access the world beyond the NT Campus.

The Big Picture

Any progressive solution to the challenges of the classroom and office is

only as good as its users allow it to be. E-Mail is a wonderful thing. However, no amount of computer software or hardware will help the user that refuses to send electronic mail or read that which is sent to them.

Probably the most difficult part of putting solutions like those described in this article in place is convincing people to use them. When faced with the prospect of electronic mail, users tend to polarize into two groups: those who love it, and those who can't get far enough away from it. Usually the former can help by trying to painlessly introduce the latter to this new technology. Most people who dislike electronic mail usually do so because they fear it is too difficult to use -- the same reason they might give for not using a computer at all.

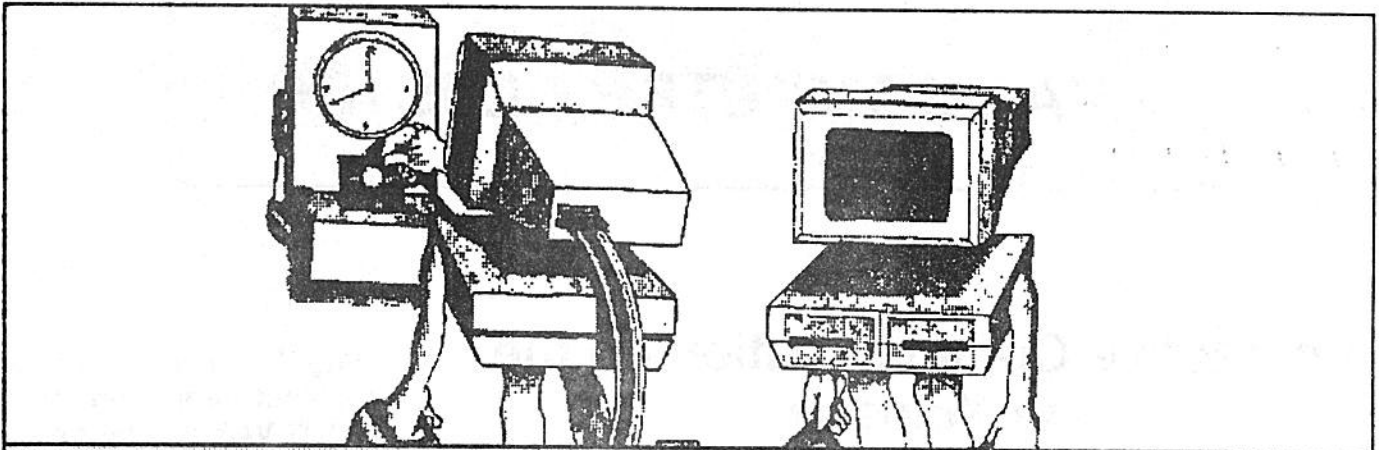
When a good E-Mail system is installed on a network, the first thing that happens is communication between users increases to levels not practical through previous means. Before long, users compete with one another to invent innovative ways to use this medium of electronic communication to their advantage.

It's virtually guaranteed that users of a LAN with WPO Mail installed on it will begin to wonder how they ever got anything done without it.[§]

[§] See "Lan of the Free, Home of the Brave," in the March, 1989 issue of *Benchmarks*.

Kevin Mullet can be reached, among other ways, by sending WordPerfect Office mail to userid MULLETT on the SCS, CC1, CIS, or TW_Lab networks. Anyone interested in finding out more about WPO Mail should call the UNT Microcomputer Support Team at 565-2316 during normal working hours (8-5, M-F).

There is also a users' group on campus of network managers who use WPO Mail extensively. The meetings of the UNT Net Managers' Group are on the second Tuesday of each month at 2:00 p.m. in the SCS Computer Lab, Room 117 in Oak Street Hall. If you like to attend a meeting, call Kevin Mullet at 565-2316 to make arrangements.



MICRO-TIPS

This column is intended to serve as a forum for sharing useful tips on making more productive use of microcomputers. If you have a tip that you feel may be of use to campus users, submit it to the Benchmarks editor for possible inclusion in a future issue.

Electronic Mail Etiquette

Whenever you are communicating with someone electronically, it is a good idea to keep the following courtesies in mind.

- **Messages should be concise.** Too much information in one message is a burden on recipients. Screens are more difficult to read than printed letters on paper and the person reading your mail may have a limited facility, e.g., slow modem, small screen, or old and clunky printer terminal.
- **Layout is important.** Clean, well laid out messages will be easier to read and be more effective in conveying what you have to say. Screens make it easy to play graphically with text. While this may be amusing, effective communication should be your first goal when using E-Mail.
- **Keep your discussion focused.** If a new topic is introduced, it should be under a separate message with a new subject heading. Unfocused messages will be less effective in conveying necessary information.
- **Clearly and uniquely label your subject.** Unique subject headings make for easy filing, cataloging, cross referencing, and retrieval. Avoid subjects that are too general such as "my comments."
- **Good subject headings also help recipients prioritize reading their messages.** Some people are at the receiving end of a lot of mail. Unless the subject is clear, interesting, and purposeful, they most likely will postpone reading it.
- **No one likes junk mail.** If possible, confine your distribution list to people who really need to know about what you are discussing.
- **Pay attention to the message distribution list before forwarding a received mail item to someone else.** The intended recipient might already have several copies of the item.
- **Be sure, however, to copy others who may be affected by your own message or may have information or suggestions to add.**
- **Don't expect instant response to your E-Mail.** Not everyone anxiously awaits your message. Although they may have E-Mail accounts or boxes, some people don't check their mail very often, or even use E-Mail. If you are uncertain of a recipient's E-Mail habits, or are not getting any response to your messages, a phone call or typed memo may be quicker and more effective. E-Mail is not always a good replacement for other communications media.
- **Although they seem temporary, assume the messages you send and receive are permanent.** Therefore, don't say anything in E-Mail that you might not want to appear in your newspaper. You might be discreet, but the person receiving the message may not be.
- **State where you are getting your information, even if you are paraphrasing.** If you are sending information from another source, pay attention to copyrighted material. Copyright laws apply to E-Mail as well as printed media.
- **Do not alter original text.** Clearly and correctly mark text that is not your own. Alterations of a message could confuse the original meaning and embarrass the original author.
- **Don't forward confidential mail.** Obtain permission from the sender first.
- **Because it works through stored technology, be aware that E-Mail might not be as private as you wish.** If confidentiality and privacy are very important, it may be more appropriate to use other communication methods.
- **Don't rush when writing your messages.** Remember that the recipient will have plenty of time to go over your message. Take advantage of text editors and spelling checkers to compose your text before sending it.
- **Use simple English to get your meaning across.** Carelessly written E-Mail can be misinterpreted.
- **Consider sending explanatory attachments to less experienced recipients.** Burdening everyone with details is frequently unnecessary.
- **Try to refrain from adding too many attachments to your E-Mail, however.** Large, bulky messages tie up the mail networks and are difficult to read and digest.
- **Avoid trivial responses.**
- **Think before you type.** If you don't fully understand a particular item, especially if it makes you angry, contact the concerned party and ask for clarification. Nobody wins in a war of words.
- **Above all, remember that you are not interacting with a machine.** People are on the receiving end of E-Mail and should receive considerate treatment.

Adapted from a revised version of "Electronic Mail Etiquette," by Alice Brzovic - Spring 1989 issue of Berkley Computing Quarterly. It was revised in SERDACumentation, Spring 1989, - S.E. Regional (Florida) Data Center Newsletter.

VAX COMPUTER CLUSTER

Interactive Communication on the VAXcluster

By Billy Barron, VAX System Manager (BITNET: BILLY@UNTVAX)

Would you like to interactively talk to other people logged into the local computer systems or other computer systems throughout the world? If so, then the VAX PHONE and SEND utilities are for you.

Using the PHONE Utility to Contact People on the UNT VAXcluster or THENET

The PHONE utility works basically like a telephone except that you type instead of talk. The best part about PHONE is that it allows conference calls of up to six people.

The simplest form of the PHONE command is `PHONE nodename::userid`. If the nodename is left off, your current machine is used as a default. For example, to phone user SDT2309 on the node STAR, type `PHONE STAR::SDT2309` from the \$ prompt.

When someone is phoning you, a message like the following will appear on your screen:

STAR::SDT2309 is phoning you on NTVAXB:: (17:22:53)

To answer the phone call, just type `PHONE ANSWER` from the \$ prompt. After a phone call is answered, each person gets a part of the screen in which they can type. To exit PHONE, just press `<CTRL><Z>` twice. If you want to reject the phone call, type `PHONE REJECT`. Please Note: these phone messages do not change the file currently being edited. After getting phone messages that mess up the screen, just press `<CTRL><W>` to redraw the screen. The phone messages will be gone.

An option is available to turn off the phone, much like leaving the telephone off the hook. To turn off the phone, type `SET BROADCAST=NOPHONE`. The phone will stay off until either logout or `SET BROADCAST=PHONE` is typed. This feature is very useful when you need to get some work done without being disturbed.

To see a list of people who are logged on a particular machine, type `PHONE DIR nodename::`. For example, type `PHONE DIR STAR::` to see who is logged onto the machine STAR. Please note that many nodes have disabled this feature. Many more features are available within the PHONE utility. Type `PHONE HELP` to see these other features.

Using the SEND Utility to Contact People on the UNT VAX cluster or BITNET

The SEND utility allows the sending of messages, one line at a time, to anybody logged into a computer on BITNET.

The syntax for SEND is `SEND userid@nodename`. If the nodename is left off, your current machine is used as the default. For example, to send a message to user JONES on the BITNET node KENTVMS, type `SEND JONES@KENTVMS` from the \$ prompt. Then a prompt like `(KENTVMS)JONES:` will appear. From this prompt anything typed will be sent to that users. Pressing `<CTRL><Z>` returns you to the \$ prompt when finished.

`SET BROADCAST=(NOUSER1, NOUSER2)` is a command that keeps other users' messages from appearing on your screen. This stays in effect until you either logout or `SET BROADCAST = (USER1,USER2)` is typed.

To see a list of people who are logged on to a particular machine, use the command: `SEND@nodename CPQUERY NAMES`. To see who is on the node SHSUODIN, for example, type `SEND@SHSUODIN CPQUERY NAMES`. Be aware that this command does not work on all the machines on BITNET.

The PHONE and SEND utilities are very useful. The best part of using them is that there are no long distance bills to pay for talking to people throughout the world!\$

Reprinted from the April 1986 issue of Benchmarks, pages 16-17.

To invoke the MAIL utility, type MAIL from the \$ prompt.

Common Commands

<u>Command</u>	<u>Action</u>
DELETE	Delete messages.
EXTRACT	Copy the current message into a sequential file.
EXIT	Exit the MAIL utility.
FILE	Put the current message into a folder.
FORWARD	Forward the current message to other users.
READ/NEW	Read new messages if any.
REPLY	Reply to messages that other users send to you.
SELECT	Choose an existing folder.
SEND	Send messages to other users.

You can also type **HELP** in the MAIL utility to see all the commands that are available.

Mail files and folders

Messages that you receive are stored in files called MAIL files. Your default MAIL file, called MAIL.MAI, is created in your default directory the first time you receive a mail message.

There is usually no reason for a user to have more than one MAIL file, but if you have more than one MAIL file, you can use the MAIL utility to access any of these files by typing: SET FILE filename where filename is the MAIL file you want to use, usually with an extension of MAI. The MAIL utility uses MAIL files with a file organization of indexed; sequential text files will not be recognized as MAIL files. To combine two MAIL files, use the CONVERT command. The following command example combines the two MAIL files OLDMAIL1.MAI and OLDMAIL2.MAI into a MAIL file named MAIL.MAI, which will contain both of them:

CONVERT OLDMAIL1.MAI, OLDMAIL2.MAI MAIL.MAI

All MAIL files are subdivided into folders. By default, your MAIL file contains a folder named MAIL. The MAIL folder contains messages that you have already read. When you receive new mail messages, they automatically enter a folder named NEWMAIL. When you delete a message it automatically moves

into the WASTEBASKET folder. This folder will be emptied when you exit the MAIL utility. You can also create your own folders. To create folders, use the file command:

file memo

The current message will be filed into a folder named MEMO. It will prompt you for the creation of that folder if it doesn't exist.

To display the names of all existing folders, use the `dir/folder` command:

dir/folder

To choose a particular folder, use the select command: **select memo**

To remove a folder, simply delete all the messages it contains.

Keypad

The MAIL utility also allows you to use the keypad to execute MAIL commands. Type **HELP KEYPAD** in the MAIL utility and it will show you the default keypad definitions.

Other Features

When you receive a mail message larger than 3 blocks, it is written to a sequential file. You will see this mail message as a file in your directory with a file type of MAI: MAIL\$#####.MAI

The n's stand for random numbers. This file will be deleted automatically when you delete the message from within the MAIL utility.&

Personalizing VAX/VMS MAIL

By Darrell Davis, Former VAX Operator

Reprinted, with minor changes, from the January/February, 1988 issue of Benchmarks, pages 10-11.

This article is directed towards the user who has a basic under-

standing of the VAX/VMS MAIL UTILITY, who uses MAIL often and wishes to tailor the MAIL environment to suit his or her needs.

Useful MAIL Tips

Following are some tips to make the MAIL utility work for you.

- **Using your favorite editor:**

To automatically invoke the EDT editor with the REPLY, SEND and FORWARD commands, set up a symbol in your LOGIN.COM as such:

```
MA*IL= "MAIL/EDIT=(SEND, REPLY=EXTRACT, FORWARD)*"
```

You may omit any of the parameters in the parenthesis to suit your needs. The REPLY=EXTRACT parameter specifies that you want to include the message that you are responding to in the body of the reply.

To invoke the TPU editor when using an editor in MAIL (EDT is the default editor), you must place the following logical definition in your LOGIN.COM:

```
DEFINE MAIL$EDIT CALLABLE_TPU
```

- **Organizing your mail files:**

The SET MAIL_SUBDIRECTORY command helps to keep all your mail files in one directory. Within MAIL type:

```
SET MAIL_SUBDIRECTORY [.sub_directory_name]
```

MAIL will create the subdirectory and will move all your mail files to the new directory.

- **Personalizing your username:**

The SET PERSONAL_NAME command in MAIL enables you to append a field to the end of the "From:" field of mail messages you send. You can fill this field with your full name or any other information you desire. For example:

```
SET PERSONAL_NAME "Allison Wonderland"
```

- **Personalizing destination addresses:**

Logicals may be used to specify the destination address field of mail messages you send. This can be useful if you send mail often to groups of people, to users with long addresses or to users with hard to remember usernames. These logical definitions must be placed in your Login.COM file. For example:

```
DEFINE BOB ZY20
```

```
DEFINE FRANK XX30
```

```
DEFINE MYFRIENDS BOB,FRANK,ZZ02
```

```
DEFINE PENPAL BITNET%""HAL@SOMENODE"" [BITNET ADDRESS]
```

```
DEFINE BOB IN%""ZQX@RICE.EDU"" [INTERNET ADDRESS]
```

With these logicals defined, you may now use the equivalence name in the "To:" field from MAIL. For example:

```
MAIL>      SEND
To:        MYFRIENDS
Subj:      How's it goin'?
How have you been?
```

would send the message to users BOB, FRANK and ZZ02.

- **Mailing files from the command line:**

To mail files from the command line without entering the MAIL utility, use the MAIL command as follows:

```
MAIL/SUBJECT="Program One"
PROGRAM.ONE TX00
```

The above would mail the file PROGRAM.ONE to TX00. The /SUBJECT qualifier is optional.

- **A handy memo:**

The following is a symbol that you can place in your LOGIN.COM to make sending short memos a breeze.

```
NOTE = "MAIL SY$PUBLIC:NUL
TXT/SUBJECT="
```

With this symbol defined you can then mail short reminders to yourself from the DCL command line. For example:

```
NOTE "Don't forget to get a job
tomorrow." XY69
```

would mail the message to user XY69.

For more information on the MAIL Utility, type HELP MAIL from the DCL command line or HELP from the MAIL> prompt. The best way to get the most use of the MAIL utility is to read all the HELP topics and experiment! §

BEST OF THE BBS



Edited by Billy Barron,
VAX System Manager
(BITNET: BILLY@UNTVAX)

Welcome to the new *Best of the BBS* column. This column highlights some of the more interesting and useful discussions on the UNT BBS. From those of you not familiar with the BBS, here is how to log into the UNT BBS.

- Sign-on by typing **CALL DEC** at the LAN prompt and then entering BBS as your Username at the VAX prompt.
- If you are already logged-on to the VAXcluster, type **BBS** at the \$ prompt.

The opinions expressed in this column do not necessarily reflect the views of Academic Computing Services or the Computing Center. Also, information in *Best of the BBS* has not been checked for accuracy.

Modems for the Apple IIe

#10122 15-MAY-1989 12:41:03.90

Subject : Apple IIe as a 1200b dumb terminal, help?

My brother is transferring to Houston at the beginning of the year. They require him to have a computer, so I lent him my old IIe. Well everything

Continued on next page ...

VAX CLUSTER USAGE STATISTICS

May Top Ten Programs: Frequency of Runs

Program	Description	Number of Runs	Percent of Total
1. LOGINOUT	User login	58787	17.4
2. SET	VMS Utility	50057	14.8
3. DELETE	VMS Utility	35685	10.6
4. DIRECTORY	VMS Utility	24983	7.4
5. TYPE	VMS Utility	18229	5.4
6. User programs	Compiled Programs	14642	4.3
7. EDT	Editor	14368	4.3
8. SHOW	VMS Utility	12816	3.8
9. NETSERVER	DECnet Server	12772	3.8
10. SYSLOGIN	User login	10198	3.0
Total		337566	

May Top Ten Programs: CPU Time Used

Program	Description	CPU Time	Percent of Total
1. User programs	Compiled Programs	28 06:55:41.83	72.5
2. DISKEEPER	Disk Defragmenter	0 23:19:28.66	2.5
3. EDT	Editor	0 19:59:10.63	2.1
4. PASCAL	PASCAL Compiler	0 19:22:47.48	2.1
5. PACSPROCESS	Accounting Utility	0 19:12:36.59	2.1
6. MAXCLAS	ERDAS Program	0 16:14:17.36	1.7
7. BACKUP	Disk Backups	0 16:05:34.16	1.6
8. MAIL	VMS Mail	0 10:25:26.72	1.1
9. LOGINOUT	User login	0 09:18:32.11	1.0
10. LISP	Lisp Interpreter	0 07:34:05.50	0.8
Total		38 11:43:14.60	

June Top Ten Programs: Frequency of Runs

Program	Description	Number of Runs	Percent of Total
1. LOGINOUT	User login	75919	19.0
2. SET	VMS Utility	60665	15.2
3. DELETE	VMS Utility	40479	10.1
4. DIRECTORY	VMS Utility	36755	9.2
5. TYPE	VMS Utility	18144	4.5
6. EDT	Editor	15708	3.9
7. User programs	Compiled Programs	14672	3.7
8. SHOW	VMS Utility	12502	3.1
9. NETSERVER	DECnet Server	11372	2.8
10. MAIL_SERVER	Remote Mail Server	11014	2.8
Total		3399263	

June Top Ten Programs: CPU Time Used

Program	Description	CPU Time	Percent of Total
1. User programs	Compiled Programs	23 12:29:25.23	73.5
2. EDT	Editor	0 16:16:37.21	2.1
3. BACKUP	Disk Backups	0 16:05:34.16	1.6
4. MAIL	VMS Mail	0 10:25:26.72	1.1
5. LOGINOUT	User login	0 09:18:32.11	1.0
6. Mail_SERVER	Remote Mail Server	0 12:05:22.89	1.6
7. FTP	TCP/IP File Transfer	0 11:56:43.49	1.6
8. BBS	Bulletin Board	0 09:37:01.11	1.3
9. PASCAL	PASCAL Compiler	0 08:39:04.73	1.1
10. TPU	TPU Editor	0 06:55:45.90	0.9
Total		31 11:34:49.61	

was going as planned, until they sent a letter saying the computers they suggest have to be IBM PC's or MAC's. The author of the letter said the computer must be capable of the following:

Printing; No problem, I've got a parallel printer interface. 80 by 25 screen; No problem, I've got a 80 col card with 128k.

Disk storage; No problem, not only do I have the duo-disks, I've even got a third disk drive.

Telecommunications; PROBLEM. I have a 300 baud card that doesn't work and no software to use it.

My question is.... What is the going price of a used 1200 baud modem and software to run it. I assume the terminal will need vt100 compatibility they want it to be able to call a PC and run MS-DOS. And they probably have a main frame or two. Any feedback would be greatly appreciated.

#10133 Reply to #10122 16-MAY-1989 15:51:31.62

Subject : RE: Apple IIe as a 1200b dumb terminal, help?

As far as getting a modem for your IIe, you need to answer two questions: is your IIe enhanced? (65C02 and mouse graphics chip) and are you sure that they do not want your brother to actually run MS-Dos

software? If your IIe is enhanced, you can get all sorts of software to run on it correctly and provide good emulation. There are even some public domain, shareware programs that will work. So programs are no problem. As far as modems go, you have a choice between internal and external. Basically, most good VT-100 software will support a Hayes compatible external modem. It is somewhat easier to work with externals and the modem doesn't sit inside next to noise generating devices. The one big drawback on a IIe is that externals require a serial card. Most of the time, you can find a serial card for \$60-\$80. Oh, the 1200 baud modems are about \$80-\$100? But the big move is to go for a 2400 baud modem. The difference in downloads and through-put are great and the price is not that much different. (try \$120-\$150)

So, software and hardware is not that much of a problem; your main problem is if the school wants him to actually run any particular software on his machine. Do they expect disk transfers on the IBM or Macs? (your IIe couldn't handle it) Do they expect him to hand in assignments on disk and would they support the IIe? Those are the type of questions you have to ask yourself.

Read some recent apple magazines for some reviews of modems and

such, but I recommend that you go with a 2400 baud external and some good VT-100 software for now. Perhaps you can find someone to unload your modem on (I did when I sold my Micromodem IIe compatible 300 baud internal for \$50)! bye

Echo Problems on the Sytek LAN

#9613

Subject : doubletalk

hhhhhhhhheeeeeeeellllpppppp!!

That line above this one filled the whole line that I am typing on. I now know that you all can't see it, but every character I type is shown twice on the screen. VERY DISCONCERTING! Why is this happening? You have no idea of what a mess this screen looks! Can Anybody help me? Every line typed here went all the way the right margin! If it makes any difference, I also had trouble getting on the BBS here. I know what you're thinking, and it can't be true... I gave this modem to my dad this last Christmas. Suggestions?

#9614 Reply to #9613

Subject : RE: doubletalk

Sounds like your duplex is set wrong, or you have the echo setting wrong. Toggle your duplex setting. See if that helps. Probably oughta be on full duplex. (At least, it's full duplex for the vax here). If that doesn't work, the local echo is turned on.

#9620 Reply to #9614

Subject : RE: doubletalk

Thanks for trying to help out. I just got home a little while ago and had a heckuva helluva hard time trying to log on. This is the strangest thing I've seen on a bbs. I find just what somebody else described, and also had difficulty in getting logged on. I find that I can get on, if I just ignore the double letters on the screen.

I have checked the duplex setting, toggled it back and forth, and still no good. I rang off and went to another bbs and found no problems. This is weird. [DUPLEX is on FULL.]

Could it be possible that the echo is only sensitive to my call-ins? Lordy, I can't stand it. You should see my screen right now.

.....
#9622

Subject : double talk...

What more than likely happened was you did not type ECHO OFF at the # prompt before typing CALL DEC.. the ECHO OFF is an important step in the login procedure, as it assures you that your characters will not double echo. The reason it gets turned on, is because some people use less intelligent systems that aren't capable of echoing their own input, so the LAN must do it for them... enough on that, just add ECHO OFF to your script, or just remember to type it before doing CALL DEC. Hope this helps...

.....
#9625 Reply to #9613

Subject : RE: doubletalk

Before you logon to the BBS, at the # prompt type echo off. Make sure your communication software is toggled full duplex. This should help you get one character for one character typed.

.....
#9627 Reply to #9622

Subject : RE: double talk...

PS to my last to you--- I just logged off again, and came back. This time I didn't do the ECHO OFF like last time and things are still okay. This must have reset SOMETHING. Thanks again.

.....
#9629

Subject : DDOOUUBBLEE
CCHHAARRAA...

To the guy with the DOUBLE CHARACTER troubles. The network connection can have two states, either the echo is on or off. You can change the state with the ECHO command at the # sign. The reason you do not need to type in the ECHO command every time is that the previous person connected to your port may have left the state of the echo off. If you are interested in or have trouble with the network connection in the future, type STATUS at the # sign. This will list many parameters for the port to which you are connected.

Sometimes the box doesn't respond when a command is submitted to it. In this case, the box has been "x'd off". To get it responding again, send a ^Q to the box. That's a control Q.

Sometimes the box doesn't want to connect to the DEC cluster when the command CALL DEC is issued. The response is something like "NO SESSIONS AVAILABLE". This means the bridge between the box you are on and the cluster can not be made. To correct this situation, sign off the network and call back. The connection controller should give you the next higher box that is available. After issuing the STATUS command at the # sign, there is a 4 digit code followed by a comma and a 1 digit code. That's the box number. If it hasn't changed you'll have to disconnect and call back.

If anyone has problems with the LAN, I would suggest they call the computer support line and have the guy/girl file a problem report. This is the one way the computer center is cognizant of network, modem, etc. problems. This assumes the bbs help is less than totally effective.

.....
#9630

Subject : network addendum

The box number illustrated in the previous message is really: 4 digit number of the box followed by a comma followed by a 1 digit PORT number.

#9660 Reply to #9613

Subject : RE: doubletalk

Two suggestions..

1. Try typing 'echo off' before you 'call dec'
2. Try toggling your duplex between full and half mode.

Telnet and FTP Utilities

#9621

Subject : RE: telnet and ftp

Telnet is used solely for remote logins and ftp is used strictly for file transfers (there is some overlap, but very little).

FTP stands for file transfer protocol, and basically you give it the remote node name, an id and a password, and then you can access the files of that remote user. you can copy them, look at them, get directory listings, and copy files into the remote directory. If you, tom, would like some more info, or a sort of tutorial on telnet and ftp, I can probably just sit down with you and show you what I know about it... the manuals and documentation are just not up to par in this area I'm afraid.... your best bet is to find someone who has hacked out the decent solutions to the problems you want solved...

.....
#9832 Reply to #9592

Subject : RE: telnet & ftp

Ftp is used primarily for remote file transfer, whereas telnet is used for remote login. You can't transfer files by using telnet and you can't use talk when you are on ftp. The ftp at some places allows anonymous users, while telnet usually doesn't. It's almost a rule that a site that supports telnet also supports ftp.

Macintosh Emulation for an IBM PC

#9862

Subject : MACINTOSH EMULATION FOR IBM PC

Does anyone know of a IBM package that will allow the PC to run mac software or to read MAC disks? I've seen the ibm light, but I'm still tied to MAC-oldlady. I want to leave her but i want to keep my offspring.

She still wants MAC capability (sigh!) but I need a PC. IS there software that will allow me to work in both worlds on a PC? ===== HELP!!!!!!

#9875 Reply to #9862

Subject : RE: MACINTOSH EMULATION FOR IBM PC

There is a product from the company that makes COPYIIPC which is essentially a floppy disk controller. When plugged into an XT type bus, it allows the computer to read and write to Mac type disks, the 800K ones, I think. All the newer Mac's are coming out with "butterfly" drives which can read and write IBM's 1.44Meg formats. Maybe you could convince your mate that you "absolutely need" a Mac IIcx AND a PS/70.

Another way is to wire them together, as in a TOPS network. It seems to work well and it is one of the cheaper networks.

Final way is to wire the two computers directly through two ports and use comm programs to transfer files. Dirt cheap but it can work.

MacIntosh Sampling Rates

#9966

Subject : MacIntosh sounds

Does anybody know what sampling rate (samples/sec) is used on the Mac for sound resources?

#9977 Reply to #9966

Subject : RE: MacIntosh sounds

There are 4 sampling rates for the mac: 22,11 for sure and i think 7 and 5 (all KHz)

#10055 Reply to #9966

Subject : RE: MacIntosh sounds

Macintosh Sampling rates usually run from 22KHz downto 4KHz. 11 or 22 KHz are the norms, since 1) these produce better sounds and 2) they are the maximum rates for most PD and low-end commercial programs.

Also be warned with sounds on the Mac that you use the correct resource type.

There are two 'snd' resource formats, one used by the system and one used by HyperCard. Although both, for some strange reason, have the same resource type, they are incompatible. This incongruity will probably be resolved in System 7.

#10117 Reply to #9996

Subject : RE: MacIntosh sounds

From "Danny Goodman's HyperCard Developer's Guide", the sampling rates are: 22 kHz, 11 kHz, 7.4 kHz and 5.5 kHz. The info was reprinted from HyperAge Magazine's article "Interactive Sound in HyperCard," by Tim Oren of Apple Computer, Inc.

Resedit on the Mac-Intosh

#9988

Subject : resedit

Does anyone have the documentation to ResEdit? how do you change the file type (like from maca to text or whatever)

#10002

Subject : RE: resedit

The March, 1989 edition of Byte has a special Mac section in which is included the article "Exploring the Mystery: Understanding ResEdit's use opens more than windows for the Macintosh programmer." (see p. MAC 39). I hope this helps

#10056 Reply to #9988

Subject : RE: resedit

Apple published the docs to resed a very long time ago, which included info on how to write your own resedit editor modules. No further documentation has been provided since, except in the form of updates and info about new editor modules that have been added on over the years.

Somewhere in the 5000+ pages of MPW docs, I may have a copy of the 10-20 pages that made up these interesting little notes and I will look there for them.

BTW, changing filetypes is not a task to be taken lightly. The OS relies on the file's type and creator to tell it what docs and appls go together.

Changing either the creator or filetype can have very nasty results if you open a doc under a less than robust appl.

Also, remember that all resource ids, filetypes and creators are case-sensitive and must be a 32-bit long, nicely represented for us as char [4]. Therefore, maca is not equivalent to MACA (MacWrite).

#10057 Reply to #10002

Subject : RE: resedit

Speaking of, either this month's or last month's MacUser had a very large article as well on using Resedit to customize your system (things like editing the system strings and icons.)§

ADMINISTRATIVE COMPUTING



Veterans Benefits Expedited By Electronic Transfer of Forms

By Claudia Lynch, *Benchmarks* Editor (BITNET: AS04@UNTVM1)

People eligible for GI Bill benefits at the University of North Texas can get their money quicker than almost any place else in the country, thanks to an innovative system adopted by the Registrar's office. Since 1988, when they first accepted the challenge of testing the Electronic Transmission of VA Certifications System (ETVACS), the UNT Registrar's office has prepared and transmitted veteran certifications electronically. According to Paulette Needham, Registrar Assistant, and Lynda Nygren, Assistant Registrar, this procedure has reduced preparation time by at least sixty percent and reduced the total time it takes for the VA Regional Office in Waco to process the certifications by six days.

Needham and Nygren have been instrumental in ensuring the success of the system. Needham has authored a user's manual that will be distributed with ETVACS, and both have been called upon to present the system at various conferences. They presented the new user's manual at the Texas Association of Collegiate Veteran Program Officials (TACVPO) held in El Paso in March. Nygren is scheduled to give two more presentations: one on July 18 in Dallas at the Management of Student Information Systems (MOSIS) conference and one in November at the Texas Association of College Registrars and Admissions Officers (TACRAO) to be held in El Paso.

The software was developed by John Bates, an employee of the Department of Veterans Affairs, and implemented at the University of Florida. Originally run on Paradox, the program is now a dBase III+ application that is compiled by

Clipper. ETVACS is no longer considered to be a test system, and is of great interest to institutions even if they do not currently have the ability to transmit the forms to their regional office (the Waco office is the only one able to receive the forms electronically at this time). It has been estimated that the number of veterans and reservists enrolled in college will increase twenty-five percent over the next five years, due to the passage of a new GI Bill - the Montgomery GI Bill. The sixty percent savings in preparation time alone, therefore, makes ETVACS quite valuable.

Joneel Harris, Registrar at the University of North Texas, is extremely proud of the job her staff has done in helping to develop this worthwhile system. Says Harris, "the mission of the office of the Registrar is to serve students in the most timely and efficient manner possible. I believe the ETVACS system exemplifies the commitment we have to fulfilling that mission."§

Electronic Transcript Network Benefits Students, Administration

By Claudia Lynch, *Benchmarks* Editor
(BITNET: AS04@UNTVM1)

The Electronic Transcript Network (ETN) is a telecommunications facility for transferring data, such as student information records, between institutions. Besides allowing for the automated transfer of student information, the

ETN also provides support for articulation and reporting activities among high schools, colleges, universities and other public and private organizations.

Owned and managed by the Association for Higher Education (a non-profit consortium of higher education institutions, private sector corporations, and public libraries), the ETN is available to academic institutions that wish to electronically send data to other participating colleges, high schools, and educational agencies. Business and industries, if they join the network, are also able to receive transcript information for employees who are enrolled at colleges and universities that participate in the network. Transcripts are sent over the network only at the request of a student.

Benefits of the ETN

Some of the benefits of using the Electronic Transcript Network are:

- Transcripts can be sent and received within one hour.
- Admissions offices have easy access to an automatic file of transcripts being received.
- Transcript handling processes are improved by reducing employee search time.
- Transcript processing costs for personnel, paper and postage should decrease.
- Record security is enhanced through the use of passwords and the elimination of manual handling.
- The network is a key link for developing electronic transcript evaluation processes, and for developing, expanding, or refining student information systems.

Member Institutions

The following is a list of the current member institutions:

- Austin Community College
- Brazosport College
- Houston Community College
- Tarrant County Junior College District
- Texas Christian University
- University of Houston - University Park
- University of Texas at Arlington
- University of Texas at San Antonio
- Blinn College
- Dallas County Community College District
- North Harris County College
- Texas A&M University
- Texas Tech University
- University of North Texas
- University of Texas at Austin

UNT and the ETN

Institutions that participate in the ETN can elect to both send and receive data or to only receive or only send data. So far, UNT has been a "receiver," but not a "sender." Development of software is underway, however, to make it possible for us to send data across the network as well as to receive.

Since joining the Electronic Transcript Network in 1988, over 5,000 transcripts have been received and evaluated here at UNT. According to Earl Jackson, Computing Center Admissions Data Systems Team Leader, the real beauty of the ETN for UNT lies in the "machine-readable" nature of the data being received. Once a transcript is received over the network, it is processed by a program that automatically evaluates a student's coursework at the sending institution against courses available at UNT. Courses are assigned to one of four categories: NO CREDIT, EVALUATED, ENBLOC, or MULTI-CREDIT. If a course is assigned to the NO CREDIT category, it will not be counted towards a student's degree at UNT. If a course is EVALUATED, it is accepted as an equivalent to a UNT course. ENBLOC courses are those that are not EVALUATED, but are accepted as equivalent by the Dean of the particular college the student is enrolled in. Finally, MULTI-CREDIT courses are those that can be taken more than once at another institution. A typical MULTI-CREDIT course is something like a P.E. course that carries one hour credit.

So far, this course evaluation is only available for those courses taken at junior colleges. However, all 63 Texas junior college catalogs have been evaluated (there are currently 41,134 transfer courses on file), and the evaluation process is being considered for upper level institutions. All this translates into more efficient and accurate transcript service for transfer students - something that makes students AND administrators happy.

*General Electric Information Services (GEIS) provides data transport services for the ETN via its EDI*EXPRESS system. GEIS provides documentation and assistance regarding its data transport services to the participating institution. Information for this article was taken from an Information Bulletin, Electronic Transcript Network, produced by the Association for Higher Education (AHE) of North Texas. Special thanks to Judy Laird of the AHE for providing much of this information. - ed. §*

Computerworld BBS Enhanced

The *Computerworld* magazine BBS has added an open forum for general discussion and an E-mail feature. Numbers are: 508-626-0214 and 508-626-0235 (up to 2,400 bit/sec.); 508-626-0165 (up to 9.6K bit/sec.).§

Student Information Management System Screen Changes

By Sandy Franklin, Academic Computing Services Microcomputer Support

A couple of changes have occurred in the Student Records Area of SIMS (Student Information Management System) Screens. The first is in Screen 2, Name Search. Previously, when searching for a particular student in Name Search, you were restricted to typing the social security number, or the first 9 digits of the student's "last name space first name" in the SID field. This space has been expanded to include the CRS field when typing the name for up to 16 characters. For example:

SCREEN: 02 SID: franklin_ CRS: benjamin_ TERM: _

The second change is Screen 4, Class Sections. Previously, when selecting a course, only that one course's sections were shown on the screen. With this change, every course that matches the course typed, and any number higher, will be shown as you press enter. See below:

SCREEN: 04 SID: _____ CRS: ENGL2000 TERM: 89Z

04 COURSE SECTIONS **** 89Z ENGL-2000-001 American Literature

SCREEN: _ SID: _____ CRS: _____ TERM: _

SEC	DAYS	TIMES	INSTRUCTORS	BLDG	ROOMS	CAP	ENR	WAIT	NOTES
001	MW	11:00-12:20	A	UB	101	O 50	2	Y	O
002	TTH	11:00-12:20	B	AB	116	O 50	48	Y	O
-----ENGL 2010 American Literature II-----									
001	MWF	11:00-12:00	JONES	UB	102	C 50	51	Y	O
002	TTH	11:00-12:20	A	AB	115	O 50	48	Y	O

If you have any questions about these two screens, feel free to contact me at the Computing Center, 565-2324. SIMS classes are taught each semester in the Personnel Training Lab. Watch the *Personnel Newsletter* for the dates and times of these classes. §

Watch Those Numbers . . .

Be on the lookout for some "significant" digits next year. This past June, the following unusual date/time sequence occurred: 01:23:45 6/7/89 An "alignment" of this type will happen only one other time in this century, and it will happen next year. Mark your calendars for this historic numerical event: 12:34:56 7/8/90

Source: Our friendly National Advanced Systems (NAS) Systems Engineer, Kern Chang.

Administrative Mail and Distribution Lists

By Douglas Heruska, Former Administrative Documentation Specialist

Did you know that any Administrative User-ID (User-IDs beginning with a C) can have access to the Administrative Electronic Mail System? If you want to add mail to an existing COMPLETE User-ID (SIMS User), you will need to fill out a "Change ID Request Form" (pink), available from the Computing Center Reception Area, ISB 119. After this form is completed, including the appropriate signatures, it should be returned to the Computing Center for processing. You will then be able to access the Administrative Mail System.

A related issue to using the administrative mail system is the concept of distribution lists. A Mail distribution list can be set up for multiple IDs that are frequently sent mail. For example, all the individual User-ID codes within a department could be included in a distribution list. It would then be possible to send mail to everyone in the department from a single mail message.

If you need to add existing User-IDs to a distribution list or create a new distribution list, send a memo to the Computing Center stating the names and User-IDs of the people you want added and the names of the distribution lists you want created or updated. Since distribution list names must be unique, you may be asked to choose an alternate name. You can see all the current distribution lists on the Administrative Mail System by typing **LISTS** while signed-on to the Mail system. This will display the lists that are currently available. §

This article was reprinted from the December 1987 issue of Benchmarks.

COMPUTING TECHNICAL SERVICES

Mainframe Performance Statistics

NAS/8083 Dual Processor Performance Statistics for May

CPU	SYSTEM	Scheduled Operating Hours	Planned Maintenance Hours	Planned Production Hours	Unplanned Maintenance Hours	Production Hours Achieved	System Uptime
ACAD	VM/SP5	744	3.87	740.13	5.04	735.09	99.3%
ACAD	MUSIC/SP	744	43.01	700.99	5.56	695.43	99.2%
ACAD	MVS/JES2	744	4.30	739.70	8.40	731.30	98.9%
ACAD	COMPLETA	744	4.52	739.48	12.34	727.14	98.3%
ADMN	MVS/JES2	744	4.29	739.71	8.58	731.13	98.8%
ADMN	COMPLETA	345	0.00	345.00	4.10	340.90	98.8%
ADMN	ADABASA	744	30.66	713.34	10.65	702.69	98.5%

System Uptime = (Production Hours Achieved) / (Planned Production Hours)

Production Hours Achieved = (Planned Production) - (Unplanned Maintenance)

Scheduled Operating Hours = (Planned Maintenance) + (Planned Production)

MUSIC/SP Planned Maintenance Hours include 22.27 hours for system backup and 16.77 hours for VM/SP3 system backup.

ADABASA'S Planned Maintenance Hours include 26.20 hours for system backup.

The ACAD CPU achieved 100% uptime; the NAS/7360 DASD achieved 100% uptime; the NAS/7380 DASD achieved 100% uptime. The ADMN CPU achieved 100% uptime; the NAS/7360 DASD achieved 100% uptime; the NAS/7380 DASD achieved 100% uptime.

Lost productivity is calculated as the greatest amount of elapsed time that any one of the production systems was un-

available for scheduled operation. Lost productivity hours were contributed to by

the key causes appearing in the table below.

ACAD CPU:

CPU, Tape, and Disk Subsystems

1. Scheduled periodic maintenance. **4.52 HOURS**

Miscellaneous

1. Corrective maintenance on air handler. 4.30 HOURS
2. COMPLETA system maintenance. 3.49
3. Emergency shutdown due to an extended disruption of utility power. 2.87
4. Undetermined cause for system resarts. 0.95
5. Systems development. 0.95

TOTAL **12.56 HOURS**
GRAND TOTAL **17.08 HOURS**

ADMN CPU:

CPU, Tape, and Disk Subsystems

1. Scheduled periodic maintenance. **4.46 HOURS**

Miscellaneous

1. Corrective maintenance on air handler. 0.98 HOURS
2. Emergency shutdown due to an extended disruption of utility power. 2.58
3. Operator errored in restarting MVS/JES2. 2.35
4. COMPLETA not started according to schedule. 1.23
5. Undetermined causes for systems restarts. 1.22
6. Systems development. 0.94
7. Inadvertent shutdown of COMPLETA. 0.50

GRAND TOTAL **17.11 HOURS**

NAS/8083 Dual Processor Performance Statistics for June

CPU	SYSTEM	Scheduled Operating Hours	Planned Maintenance Hours	Planned Production Hours	Unplanned Maintenance Hours	Production Hours Achieved	System Uptime
ACAD	VM/SP5	720	0.00	720.00	0.96	719.04	99.9%
ACAD	MUSIC/SP	720	35.58	684.42	3.16	681.26	99.5%
ACAD	MVS/JES2	720	0.00	720.00	1.49	718.51	98.8%
ACAD	COMPLETA	720	0.00	720.00	6.19	713.81	98.1%
ADMN	MVS/JES2	720	0.00	720.00	0.48	719.52	99.9%
ADMN	COMPLETA	292	0.00	292.00	0.80	291.20	99.7%
ADMN	ADABASA	720	24.79	695.21	0.63	694.58	99.9%

System Uptime = (Production Hours Achieved) / (Planned Production Hours)

Production Hours Achieved = (Planned Production) - (Unplanned Maintenance)

Scheduled Operating Hours = (Planned Maintenance) + (Planned Production)

MUSIC/SP Planned Maintenance Hours include 21.12 hours for system backup and 14.46 hours for VM/SP3 system backup.

ADABASA'S Planned Maintenance Hours include 24.79 hours for system backup.

The ACAD CPU achieved 100% uptime; the NAS/7360 DASD achieved 100% uptime; the NAS/7380 DASD achieved 100% uptime. The ADMN CPU achieved 100% uptime; the NAS/7360 DASD achieved 100% uptime; the NAS/7380 DASD achieved 100% uptime.

Lost productivity is calculated as the greatest amount of elapsed time that any one of the production systems was unavailable for scheduled operation. Lost productivity hours were contributed to by the key causes appearing in the table on the right.

ACAD CPU:

CPU, Tape, and Disk Subsystems (NAS)

1. Corrective maintenance on NAStrack DASD diagnostic hardware.

0.55 HOURS

Miscellaneous

1. COMPLETA systems failures.
2. COMPLETA system maintenance.
3. Systems development.

1.60 HOURS

2.85

3.43

TOTAL

7.88 HOURS

GRAND TOTAL

8.43 HOURS

ADMN CPU:

Miscellaneous

1. Systems development.
2. Keeping COMPLETA down to run FISCAL jobs.

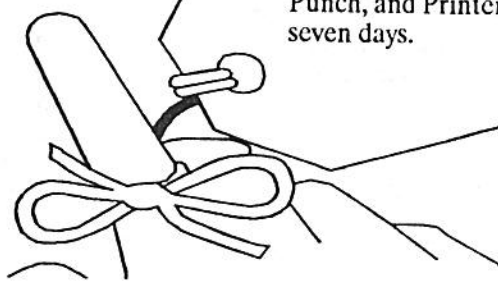
0.63 HOURS

0.80

GRAND TOTAL

1.43 HOURS

DON'T FORGET THE NEW CMS SPOOL FILE POLICY! CMS Virtual Reader, Punch, and Printer files will be purged after seven days.



DISK BACKUP SCHEDULES

OS/MVS Backup Schedule

OS/MVS disk packs (academic and administrative) are backed up daily, Tuesday through Saturday, from 4-6:30 a.m., and Sunday from Midnight to 3 a.m.

VM/CMS

Backups of VM system disks and CMS mini-disks are performed every Wednesday morning at 3 a.m. CMS mini-disks are also backed up every day sometime during the early hours of the morning. Users do not have to log-off during these backups.

MUSIC/SP Backup Hours

A message will be sent to all users signed on to MUSIC/SP approximately 10 minutes before backups are begun. It will be in the form **MUSIC SHUT DOWN AT xxxx AM-SCHEDULED BACKUP **. To find out

the backup hours while signed on to MUSIC/SP, enter **HELP HOURS**. The following backup schedule is currently in effect:

Tuesday 3 a.m. (for about 3 hours)

Weekly backup

Wednesday 3 a.m. (for about 2 hours)

Daily backup

Thursday-Monday 4 a.m. (for about 1 hour) Daily backup

PHOENIX Backup Hours

PHOENIX is backed up weekly on Sunday night. The backup begins at midnight and lasts for approximately 30 minutes.

VAX Backup Schedule

Incremental backups of the VAXcluster are performed Monday through Thursday at 6 p.m. Users do

not have to log-off, but any files that are open at the time of the backup will NOT be backed up.

Full backups of both systems are done every Friday beginning at 8 a.m. These generally will take all day to complete. Again, users do not have to log-off, but any files that are open will not be backed up.

A "Stand Alone" backup of the system disk is done once a month. This procedure makes a copy of the system disk that can be used to restore its contents if the disk is completely destroyed. The system will be shut-down for this. Watch the system log-on message for specific times and dates.

NOTE: Requests for restoration of files should be made via MAIL to the username OPERATOR. Your file can only be restored if it existed before the last backup was done. §

ACADemic (NAS) Program Hit Parade

May Top Ten Programs : Frequency Of Runs

Program	Description	Number of Runs	Percent of Total
1. IEWL	Linkage Editor	13095	15.7
2. PGM=*.DD	Compiled Program	12275	14.7
3. IDCAMS	VSAM Utility	10611	12.7
4. IKFCBL00	VS COBOL Compiler	10348	12.4
5. IEBPTPCH	IBM List Utility	9039	10.8
6. IEV90	Assembler H	6079	7.3
7. CASMA001	Sort Utility	3299	4.0
8. IEBGENER	IBM Utility	2681	3.2
9. SASLPA	SAS	2630	3.2
10. SPSSX	SPSS ^X	2031	2.4

May Top Ten Programs: CPU Seconds Used

Program	Description	CPU Seconds	Percent of Total
1. SASLPA	SAS	32540	29.5
2. PGM=*.DD	Compiled Program	20104	18.2
3. IKFCBL00	VS COBOL Compiler	10125	9.2
4. ADARUN	ADABAS Utility Module	8493	7.7
5. SPSSX	SPSS ^X	6016	5.4
6. IDCAMS	VSAM Utility	3988	3.6
7. SCRIPT	Waterloo/SCRIPT	3956	3.5
8. IEV90	Assembler H	3760	3.4
9. ISTINM01	VTAM Utility	3398	3.1
10. FATS	Tape Verification Program	2983	2.7

June Top Ten Programs : Frequency Of Runs

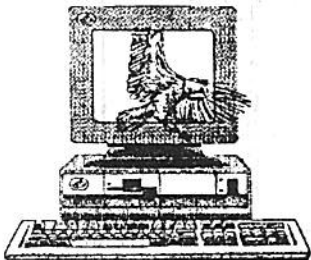
Program	Description	Number of Runs	Percent of Total
1. SASLPA	SAS	3777	14.0
2. IEWL	Linkage Editor	3587	13.3
3. PGM=*.DD	Compiled Program	3542	13.1
4. IEBGENER	IBM Utility	2993	11.1
5. SPSSX	SPSS ^X	2326	8.6
6. IKFCBL00	VS COBOL Compiler	2112	7.8
7. PTPCH	Dataset Lister	1589	5.9
8. SCRIPT	Waterloo/SCRIPT	1525	5.7
9. IEV90	Assembler H	1220	4.5
10. IKJETFO1	Password Change	778	2.9I

June Top Ten Programs: CPU Seconds Used

Program	Description	CPU Seconds	Percent of Total
1. SASLPA	SAS	185447	78.6
2. PGM=*.DD	Compiled Program	14514	6.2
3. SPSSX	SPSS ^X	7156	3.0
4. FATS	Tape Verification Program	5648	2.4
5. SCRIPT	Waterloo/SCRIPT	5493	2.3
6. ISTINM01	VTAM Utility	2263	1.0
7. IKFCBL00	VS COBOL Compiler	2228	0.9
8. GOALSYS	???	2123	0.9
9. ADARUN	ADABAS Utility Module	1482	0.6
10. PTPCH	Dataset Lister	990	0.4

The programs listed in this section were used the most frequently on the NAS CPU during the months of May and June, 1989.

Please Note that ACAD is the official designation of the part of the NAS/8083 CPU that is dedicated to faculty and student use. The portion of the computer reserved for University administrative purposes is termed ADMN.§



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